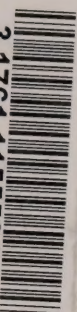


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FEDERAL ENVIRONMENTAL  
ASSESSMENT REVIEW  
OFFICE

BUREAU FEDERAL  
D'EXAMEN DES EVALUATIONS  
ENVIRONNEMENTALES

Held at/Auditions tenues au:  
Holiday Inn  
Saskatoon, Saskatchewan

Date: Mardi le 20 novembre 1990  
Tuesday, November 20, 1990

Volume: 16

B E F O R E / D E V A N T :

MR. BLAIR SEABORN	CHAIRMAN
DR. LOIS WILSON	MEMBER
MR. PETER van FLIET	MEMBER
DR. LIONEL REESE	MEMBER
DR. LOUIS LaPIERRE	MEMBER

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FEDERAL ENVIRONMENTAL  
ASSESSMENT REVIEW OFFICE  
ON NUCLEAR FUEL WASTE  
MANAGEMENT

FEDERAL D'EXAMEN  
DES EVALUATIONS  
ENVIRONNEMENTALES  
DE LA GESTION DES DECHETS  
DE COMBUSTIBLES NUCLEAIRES

SCOPING MEETING

REUNIONS DE DETERMINATION DE L'IMPORTANCE DES PROBLEMES

Hearing held at the Holiday Inn,  
Saskatoon, Saskatchewan, on Tuesday,  
November 20, 1990, commencing  
at 7:00 p.m.

VOLUME 16

B E F O R E :

MR. BLAIR SEABORN Chairman

DR. LOIS WILSON Member

MR. PETER van VLIET Member

DR. LIONEL REESE Member

DR. LOUIS LAPIERRE Member







(i)

A P P E A R A N C E S

DAN PARROTT

Students Opposing the  
Slowpoke

LORNA LaPLANTE

Saskatchewan Native  
Corporation and the  
Metis Society of  
Saskatchewan

ANN COXWORTH

Saskatchewan Environment  
Society

STEVE LAWRENCE

Prince Albert Citizens  
for Energy Alternatives

CHIEF ED BENOANIE)

Hatchet Lake Band

JAMIE KANEEN )







(ii)

I N D E X   O F   P R O C E E D I N G S

PRESENTATION BY:

Page No.

Dan Parrott	8
Lorna LaPlante	15
Ann Coxworth	27
Steve Lawrence	43
Chief Ed Benoanie	67
Jamie Kaneen	76







1 ---Upon commencing at 7:06 p.m.

2 THE CHAIRMAN: Good evening, ladies and  
3 gentleman, and welcome to this scoping meeting which is  
4 being held by the Environment Assessment Panel charged  
5 with a review of nuclear fuel waste management and  
6 disposal concept. The Panel was appointed by the  
7 Ministry of Environment in October of 1989.

8 Could I introduce the members of the panel  
9 who are with me tonight. At my immediate left at the  
10 end of the table is Mr. Pete Van Vliet of Regina, a  
11 mechanical engineer who is also a member of the Senate  
12 of the University of Regina.

13 To my immediate left is Dr. Louis LaPierre  
14 of Moncton, he is a professor in the Department of  
15 Biology at the University of Moncton and Chairman of the  
16 Environment Council of New Brunswick.

17 To my immediate right is Dr. Lois Wilson  
18 of Toronto, President of the World Council of Churches  
19 and co-director of the Ecumenical Forum of Canada.

20 And at her right again, Dr. Lionel Reese  
21 from London, Ontario, a physician at St. Joseph's  
22 Hospital in that city and a Professor in the Department  
23 of Diagnostic Radiology at the University of Western  
24 Ontario.

25 My name is Blair Seaborn, I'm Chairman of







1 the Panel. I reside in Ottawa. I'm retired but I  
2 previously served as Deputy Minister of the Environment  
3 and subsequently as chairman -- Canadian Chairman of the  
4 International Joint Commission.

5 For the secretariat I would like to  
6 introduce Mr. Bob Greyell, who is at the table here to  
7 my left who is our executive secretary, and at the back  
8 of the hall Ms. Susan Toller and Ms. Susan Flanagan,  
9 both of whom are secretariat members who will be more  
10 than pleased to assist you in any matters relating to  
11 this evening's session.

12 The review is being conducted in  
13 accordance with the Federal Environmental Assessment and  
14 Review Process, EARP. This process ensures that the  
15 environmental implications of proposals for which the  
16 federal government has decision-making authority are  
17 fully considered as early in the planning process as  
18 possible and before irrevocable decisions are taken.

19 I hope that some of you may have had the  
20 opportunity to receive information on this review  
21 process and on the proposal of Atomic Energy of Canada  
22 Limited at the open houses held in May and June of this  
23 year.

24 The Panel has been asked in part to  
25 examine the nuclear fuel waste management and disposal







1 concept, which is a proposal for permanent disposal of  
2 used nuclear fuel deep from the granitic rock of the  
3 Canadian Shield. This proposal would see the used fuel  
4 sealed inside corrosion-resistant containers and placed  
5 in holes drilled in the floor of a room inside a  
6 disposal vault. The vault would in some ways resemble a  
7 deep mine and would contain the used fuel in an area of  
8 approximately four square kilometers.

9 I would like to say a few words about  
10 the Panel's mandate. The terms of reference state that  
11 the Panel is to review the safety and acceptability of  
12 the concept for geological disposal of nuclear fuel  
13 waste in Canada, the AECL proposal, which I just briefly  
14 described.

15 In addition on this proposal, we shall  
16 examine a broad range of nuclear fuel waste management  
17 issues, including long-term management, transport, and  
18 environmental, social and economic effects. We shall  
19 look at approaches to nuclear fuel waste management and  
20 disposal being developed elsewhere in the world. Since  
21 site selection will not occur until the disposal concept  
22 has been accepted as safe, the Panel will not consider  
23 any specific sites but will review the potential  
24 availability of sites and the methodology and criteria  
25 required for site selection.





1 I would also like to say a few words about  
2 what is not in the Panel's mandate and therefore will  
3 not be addressed in this review: The energy policies of  
4 Canada and the provinces, the role of nuclear energy  
5 within these policies, including the construction,  
6 operation and safety of new or existing nuclear power  
7 plants; fuel reprocessing as an energy policy and the  
8 military applications of nuclear technology. These will  
9 excluded from our mandate.

10 I would like to make it clear, however,  
11 that the Panel is very much aware of the broader  
12 concerns related to the use of nuclear materials and the  
13 use of nuclear power for the generation of electricity.  
14 We have been urging a broader review of the comparative  
15 environmental implications of the various methods of  
16 generating electricity.

17 I'm pleased to say that steps have now  
18 been taken to get such a review under way. Letters have  
19 gone out from the Federal Department of Energy, Mines  
20 and Resources, the two provincial departments of energy  
21 and the environment, and to a very considerable number  
22 of energy and environment interest groups who have been  
23 asked to comment on proposed terms of reference for such  
24 an examination, and my hope is that this will be  
25 completed and the review can get under way before too







1 long.

2 The purpose of the scoping meetings is to  
3 allow participants to identify issues that need to be  
4 addressed in the environmental impact statement that is  
5 to be prepared by AECL. Panel is not requesting the  
6 presentation of opinions on the substance of the  
7 disposal concept at this time.

8 Public hearings will be held later to  
9 discuss whether AECL's proposal is acceptable. Scoping  
10 meetings enable participants to assist the Panel in  
11 identifying issues that are of certain and questions  
12 which need answers.

13 Following this series of meetings, the  
14 Panel will prepare draft guidelines for the preparation  
15 of the environmental impact statement. We will invite  
16 public comments on these draft guidelines over a period  
17 of at least 30 days. After consideration of these  
18 comments the Panel will finalize the guidelines and  
19 issue them to AECL which will then proceed to write up  
20 its environmental impact statement. That is a process  
21 which is expected to take a year, a year and a half, or  
22 possibly even longer than that. But when completed it  
23 will be submitted again to the Panel and that document  
24 will be made available for a 90-day public review.

25 To assist in the evaluation of scientific







1 and technical matters, a scientific review group of  
2 distinguished independent experts has been established  
3 by the Panel to examine the safety and scientific  
4 acceptability of AECL's disposal concept. A report of  
5 their findings and recommendations will be submitted to  
6 the Panel who will distribute it to the public.

7 Once the Panel is satisfied that AECL has  
8 addressed satisfactorily all the items identified in the  
9 guidelines, we will hold public hearings. Participants  
10 will be asked to discuss at that stage of the review the  
11 acceptability of AECL's disposal concept. The Panel  
12 will consider all comments submitted to it and will  
13 prepare its report -- its final act will be to prepare  
14 its report to the Ministers of Environment and of Energy  
15 Mines and Resources.

16 Present scoping meetings will be conducted  
17 according to the meeting procedure published on August  
18 24, 1990. The Panel would appreciate it if review  
19 participants would restrict themselves to the  
20 identification of issues within the Panel's mandate. I  
21 would ask those that are registered to speak to attempt  
22 to summarize their concerns in about 15 minutes unless  
23 they have previously requested an additional ten. The  
24 Panel will pay equal attention to written and oral  
25 statements.





1                   Participants who have registered in  
2 advance will be asked at the conclusion of their  
3 presentation to stay at the table and to receive  
4 questions of clarification which may be put by members  
5 of the Panel. Anyone who would like to make a  
6 presentation this evening and who has not yet  
7 registered, would you please speak to any one of the  
8 members of the secretariat and they will be glad to put  
9 your name on the list.

10                   We'll do our best to accomodate those who  
11 have not registered in advance, but this of course is  
12 dependent upon the time remaining at the end of the  
13 evening session.

14                   There are court reporters present to  
15 record the proceedings at each meeting and transcripts  
16 will be made available to designated libraries; a  
17 compilation of written submissions will also be  
18 available from the Federal Environmental Assessment  
19 Review Office in Ottawa.

20                   The Panel will accept written submissions  
21 identifying issues and concerns until the end of the  
22 month, up to and including November 30th, 1990.

23                   With this, by way of introduction, I would  
24 like to call upon our first participant for this  
25 evening, Mr. Dan Parrott, speaking on behalf of the







1 students opposing the Slowpoke.

2 Mr. Parrott.

3 PRESENTATION BY MR. PARROTT:

4 Good evening. I represent a student group  
5 at the University Saskatchewan. One of the things I  
6 think should be focused on in the Atomic Energy of  
7 Canada Limited's IES should be the effect of this  
8 project on subsequent generations. I'm thinking  
9 that the IES should be put into some sort of  
10 inter-generational context.

11 I'm sure most of us are familiar with how  
12 businesses and governments are able to re-distribute  
13 costs by passing them from one segment of society to  
14 another. Our group is concerned that there is going to  
15 be sort of an analogous-type of re-distribution from one  
16 generation to another. This might be in the form of  
17 costs for maintaining the disposal facility or it could  
18 be in the form of some sort of ecological risk  
19 materializing and leaving -- thereby leaving that  
20 generation in question to deal with the consequences.

21 As such then, I'm sure the Panel  
22 recognizes that the high level nuclear waste is a  
23 long-term problem. It must, therefore, recognize that  
24 many of the people who could quite conceivably be  
25 affected by the success or failure of this project have







1 yet to be born. These potential people, if I may call  
2 them that, they don't have a voice at these proceedings  
3 and we feel that nonetheless that decisions made today  
4 about nuclear waste will be as binding on them as they  
5 are on us, and as such if we act it's going to be  
6 without their consent.

7 Now, obviously getting their consent is  
8 isn't possible. However, we should be making some sort  
9 of effort to balance this generation's needs with the  
10 needs of future generations, and as such, this should be  
11 recognized and reflected in the environment impact  
12 statement done by AECL and hopefully what we will have  
13 is sort of a recognition that we are imposing some costs  
14 on future generations, and to do so thoughtlessly would  
15 be the height of arrogance and irresponsibility.

16 There could be a question as to how far  
17 into the future the impact statements should proceed.  
18 Ideally, at least as far as I'm concerned, it should be  
19 for the life of the disposal site. This, however, might  
20 not be practicable. As such, perhaps a more limited  
21 goal, perhaps maybe six or seven generations should be  
22 sort of set as a goal. I feel that the rationale behind  
23 this would be to be able to give sort of a reasonable  
24 amount of time for future generations to marshal and  
25 make available resources that might be needed to deal





1 with any potential problems that arise.

2 In closing, I guess, our group is  
3 proposing that AECL's environmental impact study look at  
4 the long-term effects on the environment as well as the  
5 future effects this and other socio-economic factors  
6 will have on future generations. There should also be  
7 some sort of assessment as to what kind of resources  
8 will be available to future generations and whether this  
9 project would pose an unreasonable drain and burden upon  
10 them.

11 I would like to thank you very much for  
12 your attention this evening.

13 THE CHAIRMAN: Thank you.

14 Could I ask if there are any questions  
15 which any my colleagues would like to put to Dan Parrott  
16 to follow-up on that brief written presentation, brief  
17 written and oral presentation.

18 Mr. Van Vliet.

19 MR. VAN VLIET: Mr. Parrott, there are  
20 many decisions made over the time of mankind about  
21 introduction of new technologies, new systems and so on.  
22 Could we draw some experience from or an analog from  
23 previous experiences in your opinion as to how we might  
24 get into some sort of an inter-generational context as  
25 you propose? Do you have any suggestions as to how --







1 what studies could be done or how that could be  
2 achieved?

3 MR. PARROTT: I would suggest that just by  
4 taking a look at where we are right now and how we are  
5 using our resources at present, what that is going to be  
6 leaving future generations with. This will be  
7 notwithstanding the nuclear question.

8 Right now we are faced with things like  
9 ozone depletion, rain forest depletion. We are using  
10 our resources at a tremendous rate and what that will be  
11 leaving my generation and future generations might be --  
12 you could almost consider it to be marginal.

13 Now, if we are going to propose a project  
14 like a nuclear waste disposal long term, if it's going  
15 to require -- if this particular project in mind is  
16 going to require a lot of resources to maintain into the  
17 future and if we could somehow just sort of extrapolate  
18 on what's happening now, if my generation and future  
19 generations aren't going to have to same resources, the  
20 same facilities to deal with the problems that could  
21 arise, I think that should be taken into consideration.

22 Just as an example. Right now we have a  
23 current federal deficit and that's going to have to be  
24 paid off eventually at some time. If Canadians are put  
25 into a position where we are faced with some sort of





1 constraints on -- due to the present monetary policies,  
2 we might not be able to get the financing that would be  
3 required to maintain a nuclear waste site, and if that  
4 happens you are faced with -- you're sort of faced with  
5 a serious problem. Like, how are we going to manage  
6 that then if we don't have the resources to do it?

7 So -- does that kind of make sense? Does  
8 that clarify any?

9 MR. VAN VLIET: I was thinking more along  
10 the lines of -- we've introduced all kinds of things  
11 that affect society, combustion engine and you know what  
12 kinds of things it does. Can we learn from those  
13 processes of introduction, those technologies and the  
14 effect on future generations? Can we draw an analog  
15 from that as compared to the introduction of this  
16 technology?

17 MR. PARROTT: Yeah, I kind of see what you  
18 are saying. I haven't really thought through that to  
19 that point. I'm more concerned with how costs will be  
20 transferred and --

21 MR. VAN VLIET: Your concern is with cost  
22 and economics more than technology and the effect of  
23 technology.

24 MR. PARROTT: Inasmuch as they are  
25 inter-related, I would say that I would be concerned







1 with both. As far as I can see, sort of more on a  
2 conceptual level, what's going to be left for future  
3 generations? What are they going to be concerned with?  
4 And as far as I can see, they are going to be left with  
5 a nuclear waste problem and all the costs associated  
6 with that.

7 I don't think anybody -- well, like right  
8 now nuclear power is used for the generation of  
9 electricity and I don't think anybody two or three  
10 generations down the road is really going to be -- I  
11 don't think they will enjoy the benefits of electrical  
12 production. I could be wrong in that. Perhaps there  
13 may be some sort of spinoff effect that they might enjoy  
14 that benefit, that spinoff. But as I see it now,  
15 chances are -- or the chances of that occurring are  
16 rather slim.

17 MR. VAN VLIET: Are you perhaps leading to  
18 a conclusion that current generations that has bears the  
19 benefits should also bear the costs of the waste  
20 disposal?

21 MR. PARROTT: I would say that that would  
22 be -- I would say, yes, that would be very equitable and  
23 fair. I don't know if anybody would want to pay for  
24 anything that they weren't able to somehow derive some  
25 benefit from. And to impose the cost without that sort





1 of -- some sort of return seems to me rather unfair,  
2 almost undemocratic.

3 MR. VAN VLIET: Thank you very much.

4 MR. PARROTT: Thank you.

5 THE CHAIRMAN: Any other questions on that  
6 series from Mr. Van Vliet? If not, thank you very much.  
7 Sorry. Dr. Wilson.

8 DR. WILSON: Your other concern that seems  
9 to come through here are long-term effects on the  
10 environment. And you talk about the forum of ecological  
11 risks materializing in the future. I mean, how do you  
12 suggest that be dealt with? How could we be helpful in  
13 supporting that or in raising that question?

14 MR. PARROTT: It's --

15 DR. WILSON: Could you say more about it?

16 MR. PARROTT: Yeah, I would like to.

17 I would imagine that there would be some  
18 proposals that would pose more risks than others, and if  
19 we had a proposal that would cost less now but might  
20 impose more risks later, just depending on what the  
21 standards that would be used as guidelines for the  
22 project itself, I could see that as one way of  
23 transferring the cost from now and on to the future.

24 So if it was a choice between two  
25 projects, one was more expensive now but it might be







1 safer longer than, say, a second project that might be  
2 cheaper now but in the future might pose some risks and  
3 might be a slim chance of the risk materializing but  
4 nonetheless it's there and if it does, what in effect  
5 the impact is, you've transferred a cost from one  
6 generation to another. And because of the nature of  
7 nuclear waste it's not anything that can be ignored. If  
8 these materials escape into the environment it could be  
9 cause considerable damage to people, to physical  
10 structures, whatever, through contamination.

11 I hope that elaborates a bit.

12 DR. WILSON: Thank you.

13 THE CHAIRMAN: Thank you very much indeed  
14 for that presentation on behalf of your university  
15 group. Thank you.

16 MR. PARROTT: I would like to thank the  
17 Panel. Thank you.

18 ---Mr. Parrott withdraws

19 THE CHAIRMAN: The next participant is  
20 Ms. Lorna LaPlante who will speak to behalf of the  
21 Saskatchewan Native Corporation and the Metis Society  
22 of Saskatchewan.

23 Ms. LaPlante.

24 PRESENTATION BY MS. LaPLANTE:

25 Thank you. That was Saskatchewan Native





1 Communications Corporation.

2 I'm the editor of the New Breed Journal.  
3 I've written an outline up here so that you guys can  
4 kind of follow along with me as I talk.

5 I guess if one was to assess the reception  
6 that New Breed found in Northern Saskatchewan when we  
7 were interviewing people, we would have to sum it up as  
8 being mixed reactions. Actually when we were proposing  
9 to go up and talk to people we weren't quite sure what  
10 kind of reception we were going to get. We were  
11 somewhat apprehensive but we went up there with the idea  
12 that we are going to be totally unbiased. Can get a  
13 little difficult at times.

14 The forum that we chose for interviewing  
15 people was an open-ended survey and we wanted to do it  
16 privately, because at a public meeting some people tend  
17 to be swayed by the more vocal factions within the  
18 community. So it wouldn't allow for complete honesty  
19 and full disclosure of their opinions if we had a public  
20 meeting.

21 While a lot of the people felt that the  
22 nuclear power itself wasn't such a bad thing, they were  
23 really, really concerned about the waste disposal.

24 Now, there's a number of potential impacts  
25 that this could have. Research by the New Breed







1 indicated that the two opposing camps, the pro and the  
2 anti-nuclear people, both have supportive evidence to  
3 back up their claims. And if all procedures associated  
4 with nuclear waste disposal were conducted according  
5 to the book, we would be looking at  
6 environmentally-friendly type of activity. However,  
7 this is if everything was completely foolproof and  
8 there is absolutely no danger of any kind of error at  
9 all.

10 If you are looking at the opposite side of  
11 the coin you could see that there is many environmental  
12 and health dangers that can be associated with it and it  
13 can be extremely frightening. We found that everybody  
14 was saying you have to find completely foolproof methods  
15 of disposal or else they are just terrified, absolutely  
16 terrified as to what might happen.

17 I guess the bottom line here is that we  
18 have to have more really in-depth, unbiased research  
19 conducted so that we can have accurate and conclusive  
20 results, 'cause right now there just isn't quite enough  
21 known on the subject and the research has to be  
22 completed by independent bodies who have no  
23 preconceptions of the results, people who are willing to  
24 investigate the evidence presented by both sides and  
25 fairly assess it.





1                    New Breed suggests that all biased parties  
2 be kept out of the assessment but allowed to present  
3 their evidence, and they are indicating it was going to  
4 take another year. I hope it would only take a year but  
5 I kind of have my doubts there.

6                    As with the environmental and health  
7 issues, there are two sides to the socio-economic  
8 impacts of nuclear waste disposal sites. Such a site in  
9 northern Saskatchewan would benefit the area residents  
10 in that it would bring jobs because the area now faces  
11 90 per cent unemployment. The construction phase would  
12 be labour-intensive creating many jobs. The extra  
13 income would raise the standard living of those employed  
14 and provide infusion of capital into the communities.

15                    Generally an elevated income level would  
16 mean a lower incidence are socio-economic problems.  
17 This would be providing that the jobs would go to  
18 northern Saskatchewan residents.

19                    Once a construction phase was completed,  
20 the project would be much less labour-intensive. Very  
21 few employees would be required and it's doubtful that  
22 northern Saskatchewan residents actually possess the  
23 necessary skills for these positions. They would have  
24 to be trained for the jobs that are associated with the  
25 actual disposal or storage of nuclear waste.







1                   The downside of projects such as the above  
2 in the north has been seen with the hydroelectric  
3 projects, mining and the petroleum industries.  
4 Northerners often benefit very little overall from such  
5 development. The boom and bust syndrome of development  
6 is seen initially where the communities experience an  
7 increased flow of capital during the construction phases  
8 and people often embark on decadent lifestyles, perhaps  
9 even self-destructive lifestyles, and then find  
10 themselves out of work after the construction is  
11 completed.

12                   The communities are left with a dependency  
13 on wage labour and they tend to lose track of the  
14 traditional activities such as hunting, fishing and  
15 trapping. In addition, they are back to square one in  
16 terms of income levels. So this leads to higher  
17 incidence of socio-economic problems.

18                   Once the operational phase of most  
19 projects begins, local residents are not employed. This  
20 is due to the low skill levels of the people and the  
21 high skill requirements of the positions.

22                   New Breed feels that measures must be  
23 taken to ensure that if a nuclear disposal storage  
24 facility is established anywhere in the Canadian north,  
25 the socio-economic problems are not exaggerated by the





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1 project. Once again, an independent party must assess  
2 the full socio-economic impacts of such a project.

3 In discussing the issue of nuclear waste  
4 management with the residents of northern Saskatchewan,  
5 several points can up which must be dealt with. We have  
6 compiled a list of the most prevalent concerns.

7 In random order they are: Human error.  
8 Many of the people interviewed fear that no matter how  
9 foolproof the needs of nuclear waste management may be,  
10 there's always a very real possibility of human error,  
11 as was the case in Chernoble.

12 Natural occurrences. There were concerns  
13 that natural occurrences such a flooding and shifting of  
14 the earth would alter the present state of the earth so  
15 that a nuclear waste storage facility would become  
16 dangerous with time.

17 The danger here is that groundwater coming  
18 into contact with nuclear waste and contaminating the  
19 food chain would cause a disaster. People expressed a  
20 fear that radiation cannot be seen, heard, felt or  
21 detected by human senses, therefore it would not be  
22 immediately evident.

23 Location was also a concern. Residents of  
24 northern Saskatchewan expressed a concern that such a  
25 facility should not be located anywhere that is







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1 inhabited by human beings because of this possibility of  
2 disaster. It was suggested that if a nuclear disposal  
3 storage facility had to be built in proximity to human  
4 beings it should be located closer to the sources of the  
5 waste. This means that if the larger centers in eastern  
6 Canada are benefiting from nuclear energy, then they  
7 should have to live with the waste. Some individuals do  
8 an analogy to the shipping of garbage over great  
9 distances.

10 Many northerners were concerned about the  
11 levels of nuclear waste already in northern Saskatchewan  
12 because northern Saskatchewan already has a number of  
13 uranium mines. There's already a certain level of  
14 nuclear waste in existence. Now, as these levels have  
15 never actually been determined it's not feasible in the  
16 minds of many people to add more nuclear waste to what  
17 we already have.

18 Of great concern to the people I talked to  
19 is a destruction of traditional lifestyles. There are  
20 still quite extensive traditional activity taking place  
21 in northern Saskatchewan. Even though there is very few  
22 people that actually make a living at hunting, fishing  
23 and trapping, there is a lot of people who do, to a  
24 certain extent, use traditional activities.

25 Now, this is not for, you know, completely





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1 economic reasons. People also can supplement their  
2 diet. They have a better -- they eat better, they have  
3 more nutritious lifestyle, also it's for the cultural  
4 and recreational benefits. And people are afraid that  
5 they would lose this because of reasons that were  
6 mentioned above, and they really don't want to see this  
7 happen.

8 This study has only revealed the tip of  
9 the iceberg. Numerous issues have sprung up which  
10 require in-depth study. New Breed would like have to  
11 the opportunity to conduct more research which would  
12 disclose the full impact of a nuclear disposal or  
13 storage facility in northern Saskatchewan.

14 Areas which need to be addressed are:  
15 Determination of the best method of dealing with nuclear  
16 waste, environmental impact of nuclear disposal storage  
17 facilities, the socio-economic impact, safeguards and  
18 how they could be foolproof, and alternative sites.

19 All the above issues must be investigated  
20 by an independent body, and New Breed would like to  
21 continue to be involved in this process.

22 Thank you.

23 THE CHAIRMAN: Thank you very much. You  
24 will certainly be kept informed of the progress of the  
25 work which we are doing. You will be receiving copies







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1 of the draft guidelines as a participant here, and we  
2 very much hope that those who have come out for these  
3 initial rounds of meetings will keep in touch with us  
4 and will continue to find it possible to make some input  
5 to our deliberations, so we will look forward to that.

6 Could I ask if there are questions.

7 Dr. Wilson?

8 DR. WILSON: I'm interested to know the  
9 scope geographically of your survey, of your research.  
10 And the second one is, in those concerns are they -- I  
11 mean, are they in order of importance or are they simply  
12 all come up?

13 MS. LaPLANTE: First of all, in random  
14 order, and the area that I was covering was -- I was  
15 using the DNS line, the Department of Northern  
16 Saskatchewan line. It runs I guess a little bit south  
17 of LaRonge. I talked to people in LaRonge, Stanley  
18 Mission, Buffalo Narrows, A-La-Crosse, Meadow Lake.

19 DR. WILSON: Okay. Thank you.

20 THE CHAIRMAN: Dr. LaPierre.

21 DR. LaPIERRE: Thank you, Mrs. LaPlante.

22 I have a question regarding your comment  
23 by the work being done by an independent body.

24 Do you have any idea who that independent  
25 body would be?





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1 MS. LaPLANTE: I think that you guys are  
2 doing a heck of a good job here.

3 Basically that was the recommendations  
4 that people came up with. I was just recapping what  
5 people had to say.

6 THE CHAIRMAN: We are being assisted in  
7 that regard particularly in the scientific and technical  
8 side, as I mentioned in my opening remarks, pretty  
9 impressive group of 15 scientists who will be reporting  
10 to us regularly on that and they are most certainly  
11 quite independent of the proponent, so that should help  
12 as well.

13 THE CHAIRMAN: Follow-up question,  
14 Mr. LaPierre?

15 DR. LaPIERRE: No, I'll pass.

16 THE CHAIRMAN: Mr. Van Vliet.

17 MR. VAN VLIET: Mrs. LaPlante, you  
18 mentioned that in projects such as this during the  
19 construction phase native people might benefit but not  
20 so much during an operational phase. Also, you mention  
21 that that is somewhat typical of other developments in  
22 mining or resource development.

23 To what extent is the native and Metis  
24 community preparing itself for these activities? Are  
25 they taking advantage of training programs or should







1 training programs be made available or are they more  
2 concerned with that they want to stay within their  
3 so-called traditional lifestyles without getting --

4 MS. LaPLANTE: I guess we realize this is  
5 1990 and we would like to be involved in society, but  
6 our research didn't indicate whether the people are  
7 interested in having this facility in northern  
8 Saskatchewan at all.

9 Of course, no matter what comes along we  
10 would like to get jobs other than the pick and shovel  
11 jobs. People should become trained for the  
12 opportunities that arise. But as was indicated, you  
13 know, if the waste is being made in Ontario it doesn't  
14 seem to make a lot of sense to send it over here. We  
15 already do have quite a bit of waste up in northern  
16 Saskatchewan with the mines. It's not even economically  
17 feasible to ship the stuff all the way over here when  
18 you consider transportation costs.

19 MR. VAN VLIET: My concern was with the  
20 level of preparedness of the native people to  
21 participate and to what extent are native peoples taking  
22 advantage of opportunities that they may have,  
23 educationally and vocational training, to become part --  
24 more part of 1990 rather than --

25 MS. LaPLANTE: Okay, I guess I can answer





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1 that because I'm session lecturer at the university and  
2 I also sit on the Gabriel Dumont Institute Board.

3 I would say that our educational levels  
4 are coming up and we are wanted to take advantage of  
5 every possible opportunity, but like I said, we are not  
6 out there right now training a bunch of people to be  
7 technicians at a nuclear disposal site.

8 MR. VAN VLIET: Apart from the nuclear  
9 site, there may be other skills that might be applicable  
10 in other fields.

11 MS. LAPLANTE: In other fields, well, I  
12 mean there is really there is no limit. We can become  
13 involved in anything. You name it, it's there. We can  
14 talk about becoming educators, we can talk about  
15 becoming scientists, we can talk about becoming doctors,  
16 lawyers, dentists, businessmen. We don't have to only  
17 be concerned with the nuclear industry.

18 MR. VAN VLIET: Thank you.

19 THE CHAIRMAN: Dr. LaPierre.

20 DR. LAPIERRE: You mentioned in your  
21 presentation that the waste should be left where it is  
22 for reasons that you expanded upon. May I ask you how  
23 widespread was that comment to leave the waste?

24 MS. LAPLANTE: Pardon me?

25 DR. LAPIERRE: How widespread was the







1 comment to leave the waste where it is?

2 MS. LaPLANTE: Well, if I had to give it a  
3 percentage, I would probably say 99.9 per cent of the  
4 people felt that way.

5 DR. LaPIERRE: Thank you.

6 MS. LaPLANTE: Thank you.

7 THE CHAIRMAN: Any other questions that  
8 the members wish to put?

9 Thank you very much indeed, Ms. LaPlante.

10 MS. LaPLANTE: Thank you for having me.

11 THE CHAIRMAN: Your comments about some of  
12 the socio-economic impacts we'll keep in mind as we look  
13 to some of the criteria. Thank you.

14 ---Ms. LaPlante withdraws

15 THE CHAIRMAN: The next group is the  
16 Saskatchewan Environment Society, and the spokesperson  
17 will be Ms. Ann Coxworth.

18 PRESENTATION BY MS. COXWORTH:

19 Thank you, Mr. Chairman.

20 Good evening. We are being asked to think  
21 today about how we, as a society, should go about the  
22 process of evaluating the appropriateness of a proposed  
23 method of disposal of high level nuclear waste, and  
24 while in some ways this may sound like an exercise in  
25 bureaucracy I tend to feel that it is a very necessary





1 task. But I'm not sure that we are starting at the  
2 right place.

3 It's certainly a task fraught with  
4 difficulty. While some people believe that the problem  
5 of high level waste disposal is, at least theoretically,  
6 under control, many others feel that we as a global  
7 community have been irresponsible in allowing the  
8 production of these hazardous wastes to continue over a  
9 period of several decades without the problem of safe  
10 disposal having been resolved.

11 Many lay people have probably been led to  
12 believe that this kind of technical issue should be left  
13 to "the experts". Most of us, after all, have not had  
14 the experience of working with highly radioactive  
15 materials, although I have, incidentally. And perhaps  
16 people don't really understand the risks.

17 There has been a tendency to label  
18 concerns raised by nonexperts as irrational, ignorant  
19 fear. We have been encouraged to simply trust those  
20 with the technical expertise to look after things  
21 safely. If that trust ever really did exist, it has  
22 certainly been shattered or at least badly cracked in  
23 recent years by the revelations of shortsightedness, of  
24 coverups, of simple human fallibility which have been  
25 shown to be an inevitable part of the all-too-human







1 enterprise which constitutes the nuclear industry.

2 Now, as this hearing demonstrates, many  
3 members of the lay public are recognizing that we all  
4 have an obligation to become involved in the  
5 decision-making about how to handle this human-created  
6 problem. Many who speak at these hearings wish that the  
7 problem had not been created in the first place, but  
8 given the fact it has, there is general recognition that  
9 some kind of solution has to be found, and as someone  
10 who worked at Cellifield at a time when high level  
11 wastes were being disposed of in the Irish Sea, I  
12 perhaps feel the burden of that responsibility  
13 particularly strongly.

14 The first consideration in establishing  
15 the scope of the environmental assessment is to  
16 recognize that the nuclear waste issue has to be dealt  
17 with within the context of sustainability.

18 Following the publication of the  
19 Brundtland Report, Canadian governments, both federal  
20 and provincial, indicated their intention to adopt the  
21 principles of sustainable development in planning our  
22 economic future.

23 Just what we choose to mean by  
24 "sustainable development" is not terribly clear yet, but  
25 as a nation and as provinces we are engaged in a number





1 of processes to define what we want to set as goals for  
2 a sustainable future and to develop conservation  
3 strategies to guide us.

4 So whatever mechanism we choose for  
5 dealing with the wastes we have already created and  
6 whatever choices are made about future production of  
7 nuclear wastes, we must make these decisions within the  
8 framework of whatever assumptions we, as a society, make  
9 about the meaning of sustainability.

10 Now, this Panel has tried to insist that  
11 it is not within its mandate to deal with the future of  
12 nuclear power in Canada, and you have emphasized this  
13 tonight, Mr. Chairman.

14 I can well understand your desire to limit  
15 the discussion manageable range of issues, but to try  
16 and talk about how to dispose of waste products without  
17 talking about whether and to what extent we are going to  
18 continue to produce waste products is simply not  
19 appropriate.

20 No one, I think, is going to argue with  
21 the fact that we have to find a way of managing the  
22 wastes which have already been produced by reactors in  
23 Canada and which inevitably will continue to be produced  
24 over the next few years as these reactors live out their  
25 productive lifetimes. We need to examine the various







1 options which may exist for management of this waste and  
2 to make the best choice possible amongst these options.

3 We are dealing here with a relatively  
4 small volume of material, small that is compared with  
5 what we might to have deal with if we were to decide to  
6 extend and expand the use of nuclear energy in Canada or  
7 to import wastes from other countries.

8 So quite apart from dealing with this  
9 relatively limited quantity, we need to decide whether  
10 we intend to continue to produce or acquire such wastes  
11 into the indefinite future.

12 There is, I think, a very justified fear  
13 that once a system of waste disposal is established even  
14 just as a concept, it will be very difficult to resist  
15 the pressure to continue to accept wastes indefinitely  
16 or from elsewhere. I believe, therefore, that it is not  
17 realistic to exclude consideration of the future of the  
18 Canadian nuclear power industry from the scope of these  
19 proceedings.

20 So more properly I should suggest that  
21 prior to dealing with the waste issue we have to deal  
22 more broadly with the question of Canada's intentions  
23 regarding the development of nuclear power, and probably  
24 this would be most appropriately accomodated through a  
25 national inquiry into the future of nuclear energy.





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1                   The present EARP process would then have  
2 a context within which to conduct its part of the  
3 discussion, a context which is presently lacking.

4                   I've made reference earlier to the  
5 possibility that at some future time Canada might  
6 consider providing waste disposal facilities for other  
7 countries. I get particularly nervous when I hear that  
8 the United States is supporting the research and  
9 development underlying this proposal, particularly  
10 knowing what difficulty they are running into in finding  
11 acceptable storage sites in the United States.

12                  There is indeed an argument to be made  
13 that if we sell uranium to other countries it would be  
14 most responsible for us to insist on getting back the  
15 used fuel in order to insure that it doesn't end up in  
16 weapons or in insecure dump sites. But if we do this of  
17 course there is the problem of us in Canada having to  
18 bear the environment costs of the waste management and  
19 for everyone along the route to sustain the risks  
20 involved in transportation and handling.

21                  This question of whether or not we intend  
22 to import wastes, therefore, must be part of the  
23 discussion when we address the assessment of the  
24 proposed disposal method. Otherwise, we may be both  
25 literally and figuratively opening up a bottomless pit.







1                   Having made those broad comments about the  
2 framework for the discussion, let me now refer to some  
3 of the more specific concepts which I believe need to be  
4 included in the assessment process.

5                   First, we have to recognize the degree of  
6 uncertainty which exists and the lack of experience that  
7 we have collectively acquired for making decisions about  
8 significant changes to the environment.

9                   As David Suzuki so elegantly put it in his  
10 newspaper column a week or two ago, quote:

11                   "Given the state of our ignorance, the  
12 notion that in only a few months enough  
13 information can be collected to assess the  
14 consequences of massive projects like  
15 dams, aluminum plants or pulp mills is  
16 ludicrous. The so-called data assembled in  
17 an environmental assessment area are so  
18 limited in scale, scope and duration as to  
19 be virtually worthless scientifically.

20                   At the very least, the environmental  
21 assessment can highlight questions, reveal  
22 areas of ignorance and warn of potentially  
23 sensitive effects. Anyone who claims to  
24 know enough to predict with confidence the  
25 consequences of new developments simply





1 doesn't understand the limited nature of  
2 scientific knowledge."

3 So our assessment process for this  
4 proposal has to recognize and deal with the fact that we  
5 are dealing with an area in which much remains unknown.

6 The impact statement needs to deal with  
7 this reality and to discuss the various options which  
8 exist for action based on incomplete information.

9 Secondly, the impact statement needs to  
10 discuss the issue of human fallability. It is very hard  
11 to anticipate all the possible ways in which human error  
12 could affect a waste management site. The problem is  
13 particularly serious in a situation where the Atomic  
14 Energy Control Board is, by its own admission, unable  
15 because of lack of resources to carry out its regulatory  
16 responsibilities with the thoroughness and effectiveness  
17 that is needed to ensure that the industry is meeting  
18 its safety obligations. This difficulty needs to be  
19 confronted directly.

20 Thirdly, because of the long-lived nature  
21 of these hazardous materials, we need a management  
22 system which will be good for several centuries at  
23 least. We have no experience of designing systems which  
24 have to survive this long. The major problem would seem  
25 to be the instability of human institutions. We have to







1 think about how our waste disposal site might fair in  
2 the event of global war or other form of communal  
3 madness or what might happen in the case of loss of  
4 technical records or changes in national boundaries or  
5 economic systems. Not easy things to predict or to  
6 contemplate but necessary if we are to attempt to act  
7 responsibly.

8 Fourthly, given the fairly widespread  
9 mistrust which exists between the public and the nuclear  
10 industry worldwide, we need to talk about how any waste  
11 management system operated by the industry can be  
12 regarded with any sense of equanimity.

13 It may be because of the link with the war  
14 industry that the nuclear power establishments around  
15 the world have felt the need to be so secretive and  
16 defensive about their problems.

17 The current waste management proposal is  
18 being launched against a background globally which  
19 contains too many stories of suppressed reports, covered  
20 action and political manipulation. And it's going to  
21 take more than cute TV commercials of little kids  
22 planting trees with grandpa to erase the image of  
23 industry which should be treated with extreme suspicion.

24 The relevant question for us now, I  
25 assume, becomes: Who should be responsible for





1 overseeing and managing the waste management system and  
2 how can we be sure that we can trust them?

3 The answer, by the way, is not for the  
4 industry to hire more PR staff to reassure us; it must  
5 rather, I think, lay more in the direction of removing a  
6 lot of the control of the system from bodies which are  
7 inaccessible to the public.

8 Control is quite closely tied to access to  
9 information, so the environmental assessment process  
10 needs to address the problem of establishing a process  
11 which is and which is perceived to be, open, unbiased  
12 and free of PR manipulation.

13 Next, we need to talk about how a siting  
14 decision would be approached if the concept were  
15 approved. We have too much experience in Canada of  
16 depressed regions which, out of desperation, gladly  
17 accept dubious development opportunities which would not  
18 be welcomed by a community which saw other options for  
19 building economic prosperity.

20 The scoping process should include  
21 discussion of how to avoid using the waste site as a  
22 boobie prize for a community that believes it has no  
23 other option for survival. This means that the  
24 community involvement part of the siting process must be  
25 based on a legitimate community development model and







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1 not on a public relations model, and this should be  
2 discussed within the concept assessment long before  
3 specific sites are proposed.

4           Some of the other more obvious issues  
5 which need to be covered in the concept assessment would  
6 be: The impact of a disposal site on other actual or  
7 potential land uses including uses by non-human species;  
8 the possibility of Canadian Shield sites eventually  
9 being subject to native land claims; the interaction of  
10 federal, provincial, municipal and Indian jurisdictional  
11 powers on decisions about siting, about transportation  
12 of wastes and about management of a waste site; how to  
13 build in independence of regulators; access to  
14 information for intervenors in subsequent hearings and  
15 for the concerned public over the next five centuries; a  
16 full discussion of the alternatives which is may exist,  
17 for example, above-ground storage; to what extent the  
18 site should be designed in such a way that people in the  
19 future could reopen the site, should they wish to; as  
20 well of course the obvious technical factors such as the  
21 mobility of radionuclides should they escape from their  
22 containers, the longevity of containers and the impact  
23 of any possibly leached radionuclides on the ecosystem.

24           I said at the outset that this was going  
25 to be a difficult process and I do not envy you your





1 task. I would just like to encourage you to be bold  
2 enough to take upon yourselves the responsibility to  
3 include in your discussions whatever issue you become  
4 convinced are relevant, whether or not the Minister of  
5 Environment has designated them as part of your mandate.

6 Thank you for this opportunity to address  
7 the Panel.

8 THE CHAIRMAN: Thank you very much,  
9 Ms. Coxworth.

10 I, for one, will want to reread in  
11 transcript -- and we'll that have fairly soon -- your  
12 presentation this evening because there is a great deal  
13 of meat in it which we will want to look at again.

14 I'm glad to see you putting in a plug for  
15 the rather wider look at energy options. We, too, would  
16 be delighted to have that and that's one reason why we  
17 are pressing forth and our hope is that if such a wider  
18 review gets under way soon, as I think there is some  
19 reason to hope it will, it will place our work into some  
20 better context. I'm glad to hear that put forward.

21 Also, at one moment I thought that you  
22 were saying that we had decided upon our terms of  
23 reference, but in your windup I noticed you correctly  
24 put it, that the Minister of Environment had decided  
25 that -- we have terms of reference we were assigned, but







1 we have -- all of us are convinced a certain amount of  
2 latitude in interpreting those, and I think we will not  
3 hesitate to do so when we think that's the proper thing  
4 to do.

5 May I ask if there are questions  
6 which members of the Panel would like to put now to  
7 Ms. Coxworth.

8 Dr. LaPierre.

9 DR. LAPIERRE: I have one question  
10 regarding your comment of storage, above-ground storage.

11 I wonder if you have any further comments  
12 on that, whether you would like to see the concept  
13 developed above ground versus deep geological storage.

14 MS. COXWORTH: Yeah. I haven't resolved  
15 for myself yet whether I would prefer to see it above  
16 ground or below ground. I can see arguments on both  
17 sides. So all I'm saying at this point is that I think  
18 that we have to review all the pros and cons very  
19 carefully.

20 I can see the argument in favour of having  
21 it above ground is that we are not going to forget that  
22 it's there, it's going to be constantly monitored if its  
23 out and visible. But at the same time it's obviously  
24 more of a risk to the immediate surroundings if it's  
25 above ground. So I can see arguments on both sides.





1 THE CHAIRMAN: Mr. van Vliet.

2 MR. VAN VLIET: Ms. Coxworth, you identify  
3 some concerns about the instability of future  
4 institutions. Could that possibly lead to a conclusion  
5 that a permanent underground storage was safer than  
6 above-ground storage?

7 MS. COXWORTH: Yeah. I mean, I think that  
8 certainly is one argument in favour of a system that  
9 does not -- that requires minimum maintenance. You put  
10 it away and can forget about it; you are less dependent  
11 on human institutions.

12 MR. VAN VLIET: Would that be a major  
13 factor in your opinion, in your considerations?

14 MS. COXWORTH: I think it would be a very  
15 significant one.

16 MR. VAN VLIET: Thank you.

17 THE CHAIRMAN: Dr. Wilson.

18 DR. WILSON: As you know, we are charged  
19 to look not only at the safety but the acceptability of  
20 the concept, and I'm interested that you have suggested  
21 that we make sure that legitimate community development  
22 model has been put in place when it comes to that stage.

23 This may be an unfair question, but off  
24 the stop of your head could you help us with some --

25 MS. COXWORTH: Can I design a process?





1 DR. WILSON: I knew that was unfair.

2 MS. COXWORTH: Sure, I'll design a process  
3 if you give me adequate time and resources to do it.

4 DR. WILSON: What are some of the  
5 elements, and the second thing is, do you have -- not  
6 right here but can you give us names of some people who  
7 could assist us in that?

8 MS. COXWORTH: I don't have them at my  
9 fingertips, Dr. Wilson, but I would be certainly pleased  
10 to write to you with some suggestions.

11 DR. WILSON: Do you want to say anything  
12 about some of the chief elements in your experience?

13 MS. COXWORTH: Well, I think one of the  
14 problems with a lot of the processes that we presently  
15 use in going into a community are based on the fact that  
16 it's normally the proponent who goes in with an  
17 information program, often a very appealing, glossy  
18 program that promotes the positive sides of the  
19 development. And it's definitely conceived of as a  
20 selling job rather than being part of a process which is  
21 looking at the life of that community and its goals and  
22 looking at all the different alternatives that might  
23 exist for economic development within that community.  
24 It's almost like, do you want a nuclear waste plant or  
25 do you want nothing, rather than, what are all the







1 different ways that this community could be made viable.

2 THE CHAIRMAN: Dr. LaPierre.

3 DR. LaPIERRE: One question regarding your  
4 responsibility to monitor by an independent body.

5 I gather that you wouldn't want that  
6 independent body to be AECL, but would you want it to be  
7 somebody attached to government or totally independent  
8 of government?

9 MS. COXWORTH: I would see it as probably  
10 being a body that would be appointed by government but  
11 that would be given a pretty large degree of freedom  
12 from government as, for example, the FEARO panels tend  
13 to be.

14 DR. LaPIERRE: And would that body have  
15 the responsibility of making the information and data  
16 available to the general public?

17 MS. COXWORTH: I think that's probably  
18 appropriate, yeah.

19 THE CHAIRMAN: If no further questions,  
20 then thank you very much indeed, for a very thoughtful  
21 and helpful presentation, Ms. Coxworth.

22 ---Ms. Coxworth withdraws

23 THE CHAIRMAN: The next person I have on  
24 my list is Steve Lawrence representing the Prince Albert  
25 Citizens for Energy Alternatives.





1 If Mr. Lawrence would come forward.

2 PRESENTATION BY MR. LAWRENCE:

3 Good evening, Panel. I would like to  
4 welcome you guys to Saskatoon, and I appreciate you  
5 coming all this way to listen to us.

6 The first thing I would like to say, just  
7 in case there is any doubt, is I'm opposed to the entire  
8 nuclear cycle. I just believe there is too many  
9 ramifications to the whole industry to let it prolong  
10 indefinitely into the future at this present state of  
11 technology.

12 I believe that whether or not this concept  
13 is accepted or not, its ramifications must be revolved  
14 into a much broader review of the entire nuclear cycle.  
15 It is accepted it should be put into a much bigger  
16 international picture. High level nuclear waste has  
17 long been a controversial issue and if international  
18 agreement on their disposal cannot be reached then  
19 AECL's role in the proliferation of nuclear technology  
20 must be questioned.

21 Mechanisms for assuring proper disposal  
22 practices in all countries must also be reached. If the  
23 concept is not approved then all future developments of  
24 nuclear facilities must be put on hold until an  
25 acceptable method is found, or, if the review decides







1 that in view of the information already gathered, that  
2 an acceptable method of disposal is not possible, it  
3 then it should consider phasing it out entirely.

4 Further, if the review does accept the  
5 proposal then the Canadian public, who, in the end, will  
6 be accepting all the risks, must be allowed to make the  
7 ultimate decision. Technicians and scientists must be  
8 able to relay their information in a constructive way if  
9 the proposal is to have credence. The following  
10 suggestions need to be answered if this ultimate goal is  
11 to be reached.

12 Transportation.

13 It is my understanding that the  
14 penetrating gamma radiation cannot be completely  
15 shielded by the transport casks. What are the public's  
16 risk to exposure?

17 From Chernoble we have learned that cesium  
18 adheres very well to asphalt, cement and dirt which  
19 makes it extremely difficult clean up. Its gamma  
20 radiation gives a whole body radiation dose. Of the two  
21 transport tests that I'm aware of, it appears that the  
22 truck takes the full impact of the shock and not the  
23 cask. What would happen to the cask if it had to take  
24 nearly the full impact? Are the physical tests being  
25 performed or merely computer simulations?





1                   Heavy transport traffic trucks have an  
2 average of four and a half accidents per million miles.  
3 Is this an acceptable risk? If the casks are to be  
4 transported by train, have they accounted for the  
5 crushing forces that can result from an accident, or for  
6 the fact that rail cars containing extremely combustible  
7 chemicals could end up beside one of these casks? What  
8 impact would a release of gases from a cask have that  
9 was involved in an accident and fire? What would it  
10 take to puncture a cask? Are there other worse case  
11 scenarios that need to be accounted for in risk  
12 assessment? Have unit trains been considered that would  
13 travel at much slower speeds?

14                   In 1976 in North Carolina a nuclear train  
15 accident initiated a response from 17 different agencies  
16 with 10 different emergency plans. I don't know how  
17 they worked their way out of that one, but emergency  
18 planning for all communities through or near which a  
19 shipment passes will be a necessity with a coordinating  
20 plan involving all the various agencies.

21                   Would air and water transport and their  
22 ramifications be considered? Mitigation measures must  
23 be laid out to encompass impacts of all possible  
24 accidents. Clear levels of responsibility must be laid  
25 out so those ultimately responsible for an accident can







1 be tried in court. Perhaps it should be considered  
2 mandatory that nuclear facilities be located so wastes  
3 can be stored on site. Should people who don't share in  
4 the benefits be asked to take the risks, or worse, have  
5 the risks imposed upon them? What will be the financial  
6 costs of transportation?

7 The Disposal Concept. Origins.

8 In 1980 the Geoscience Council of Canada  
9 maintained that the 20-year schedule proposed in 1977 to  
10 develop a nuclear waste site was overly optimistic and  
11 compromised scientific integrity and that funding had to  
12 be dramatically increased. They were also concerned  
13 that the shale and salt options were being ignored,  
14 indicating that these sites were found in southern  
15 Ontario and that there would be much too much political  
16 opposition to them. They also pointed out that because  
17 AECL had a conflict of interest that they should be  
18 submitted their research to peer reviews.

19 Concerning plutons in the Shield, they  
20 said there was a fundamental lack of knowledge of the  
21 nature of the formations at depth and the rate of water  
22 flow to the surface.

23 I haven't read the Hare report, but if  
24 this disposal concept is going to have any credibility  
25 at all it is-going to have to scientifically justify why







1 this particular rock formation was chosen at the time  
2 and while all others were excluded. They should also  
3 justify that the time and financing has been adequate.

4 I would like to know how Canada's research  
5 compares to that of other countries and whether  
6 conclusions being reached are the same or different in  
7 significant ways. Have worse case scenarios been  
8 compared against our present above-ground storage?  
9 Perhaps we are better off having it accessible where we  
10 can correct problems as they arise.

11 This concept encompasses only high nuclear  
12 only high level nuclear field wastes. To me this begs  
13 the question as to whether low and medium level waste  
14 including decommissioned reactor parts are being handled  
15 satisfactorily or whether they should be included in  
16 this review.

17 There is growing public concern over  
18 these. Has the science of geology advanced sufficiently  
19 that it has a grasp of the big picture that will enable  
20 it to make kind of guarantees? What is the definition  
21 of the stable?

22 Will other countries be allowed to ship  
23 nuclear waste into these vaults if this concept is  
24 approved and what would be the ramifications? On what  
25 scale would the risk levels be increased?





1                   The concept.

2                   My first question is: Why do they want to  
3 bury wastes in a deep hole rather than a shallow one  
4 where there might be some hope of keeping the vaults  
5 dry? It seems only reasonable that since water would be  
6 the prime vehicle for these wastes to make their way  
7 into the environment that dry storage would be  
8 preferable. Shafts, boreholes and fractures will be  
9 sealed with clay which will slow down the movement of  
10 water but even so the vaults are esimated to be filled  
11 within forty years. The waste itself will heat this  
12 water to at least 100 degrees Centigrade, or perhaps it  
13 will be much higher, and the water is already under  
14 pressure. This hot water will probably initiate  
15 chemical and physical changes in the surrounding rock.

16                  If the canisters do begin to leak, how  
17 much absorption of the waste will take place in the  
18 granite and how much wil begin to migrate? According to  
19 Gordon Edwards, if even a small fraction of one per cent  
20 of these wastes reach the environment it would be a  
21 catastrophe. He speaks of thermal pulses being  
22 initiated 1000 to 3000 years after the depository is  
23 closed. Convective flows would extend to a radius of  
24 five miles. If no faults are present four cubic meters  
25 per day of contaminated waste could reach the surface







1 within 40 years, or within 50 days if faults are  
2 present.

3 Now, he's talking of apertures 1/1000 of  
4 an inch and I have to wonder about the five shafts that  
5 will be sunk down to the vaults and all the test  
6 boreholes. Is it realistic to hope that the clay seals  
7 and grouting are going to significantly restrain the  
8 flow of water on its way to the surface? Is this  
9 concept of convection currents quite possible?

10 Granite is already a very brittle rock and  
11 I have little doubt that these plutons will be  
12 considerably fractured by tectonic activities of the  
13 past. What type of mining techniques will be employed  
14 to keep at a minimum additional fracturing during the  
15 construction phase? Will the heated groundwater have  
16 additional affects on the fractures? What affects will  
17 earthquakes have on these sealed fractures?

18 Ontario does have relatively mild  
19 earthquakes. Has there been any testing in areas of the  
20 world that presently suffer much more severe quakes?  
21 Can we realistically predict that the depository will  
22 not be hit by a major earthquake for even ten thousand  
23 years?

24 What are the worse case scenarios? These  
25 are what will give us the most realistic picture





1 possible of the risks involved.

2 What contingency measures do they foresee  
3 that would necessitate evacuation of the vaults?

4 If remedical work has to be done by future  
5 generations on a sealed storage vault, what levels of  
6 radioactivity will they be forced to operate in? Wastes  
7 will be more toxic 50,000 years from now than they will  
8 be 5,000 years from now due to radioactive decay to new  
9 elements.

10 In 1972 at the Hanford Institute there had  
11 been a practice of disposing of what they called  
12 slightly contaminated liquid wastes in Trench Z-9.  
13 However, it was found that radioisotopes were being  
14 selectively absorbed by the soil layers. One particular  
15 layer was so concentrated with plutonium that it was  
16 felt that a heavy rain could possibly act as a moderator  
17 for a nuclear chain reaction. What are the  
18 possibilities for groundwater in the depository to set  
19 up similar conditions and if it is a possibility what  
20 would its impact be?

21 The concept put forward has a choice of  
22 material, methods and designs for many of its components  
23 which depend on the actual site. It should be spelled  
24 out clearly in this review what options are appropriate  
25 for what type of sites. It should also spell out what





1 the parameters are for a suitable site; i.e., what are  
2 the minimum specifications that would make a site  
3 acceptable.

4 I have no idea what degree of difficulty  
5 there is in mapping out the groundwater regimes at depth  
6 or how they interact with groundwater regimes at other  
7 depths and with the surface, nor do I know to what  
8 degree the shafts and boreholes will alter the regimes  
9 during construction or after the vault is sealed. These  
10 are going to have to be very carefully explained. It is  
11 my understanding that the URL at Lac du Bonnet is  
12 literally soaking wet.

13 Is the presence of water even at this  
14 stage not considered a problem? Is it possible that  
15 artesian-type pressures could force groundwater up to  
16 the surface through the shafts after the vaults are  
17 sealed? Geology is still very much a descriptive  
18 science and it is debatable whether computer models of  
19 complicated interactions over long periods of time could  
20 be considered reliable. Again, I feel we still have to  
21 look at the worst case scenarios to have any concept of  
22 the risks involved and we have to have confidence in our  
23 evaluative techniques, will leave no stone unturned in  
24 determining possible migration of contaminated water  
25 into the surface environment.







1                   What routine releases of radiation can  
2 we expect during the handling of waste fuel from the  
3 reactor site to its burial? Will there be any  
4 cumulative effects?

5                   The operating life of the vaults seem to  
6 have been set at 50 years. What is the reason for this?  
7 Why cannot one site be developed indefinitely?

8                   Just because AECL has developed the  
9 concept doesn't necessarily mean they should be in  
10 charge of the program and indeed there may be some  
11 conflict of interest. Perhaps public health officials  
12 should be running the show. The powers, credibility,  
13 and obligations of the regulating body must be  
14 impeccable. A two-million litre spill at the Rabbit  
15 Lake mine a year ago found us with the Atomic Energy  
16 Control Board, the Federal Department of the Environment  
17 and the Provincial Department of the Environment unable  
18 to do anything and efforts to even hold an inquiry have  
19 been frustrated.

20                   An explicit set of regulations must be  
21 clearly laid out to ensure its safe operation and should  
22 give a good indication of the penalties involved for  
23 noncompliance, and again lines of responsibility should  
24 be determined.

25                   The Porter Commission surmised that spent





1 nuclear fuel remains extremely radioactive and toxic for  
2 hundreds of years, very radioactive and toxic for  
3 thousands of years, and moderately radioactive and toxic  
4 for tens of thousands of years. In view of this, is 500  
5 years a reasonable length of time to guarantee the  
6 integrity of the canisters or should we be looking at a  
7 much longer time parameter? What techniques are to be  
8 used to test each canister to ensure that it meets  
9 whatever standard we may set? On what basis can we even  
10 guarantee that these standards will satisfy our time  
11 parameters?

12 There have been studies of natural  
13 deposits such as Cigar Lake and Oklo which looked at  
14 uranium oxides and plutonium, but nothing has been  
15 mentioned of the more volatile isotopes. Is there any  
16 cause for concern here?

17 It is quite possible that by the time a  
18 repository has been prepared that some aspects  
19 of it will be found to be unacceptable. There must be  
20 mechanisms built into this review that will allow  
21 improvements to be made to the concept as our knowledge  
22 expands.

23 The uranium industry has not been quick to  
24 rectify past wrongs in Saskatchewan and we must have  
25 assurances that developments in the future will accept







1 their responsibilities to rectify situations that we  
2 have allowed to occur through our ignorance.

3 For an example, I would like to give the  
4 abandoned mine sites at Uranium City, and I think there  
5 are over 40 of them, and the Gunner and the Lorado Mill  
6 sites that are just literally piles of tailings laying  
7 on the ground.

8 A chosen site will undergo monitoring and  
9 development for 20 years prior to environmental impact  
10 assessments. To my way of thinking, the socio-economic  
11 impacts need to be done before any development takes  
12 place. People live a long time in an area or community  
13 because they have cultural and historial roots there or  
14 because they really want to live there and value what it  
15 has to offer.

16 In view of this, a large percentage of the  
17 people employed must be long-term residents of the local  
18 community or area. If the community is unable to offer  
19 this then it is a strong indication that they don't want  
20 the facility and it is not in their best interests to  
21 have it.

22 And assurances that it is safe will not  
23 gain acceptance if we don't have community acceptance of  
24 the project and community involvement in it.

25 In Saskatchewan the north is where the





1 Precambrian Shield exists and this is also where the  
2 uranium mines are. I'm not totally satisfied with the  
3 handling of mine wastes and mill tailings and neither  
4 are the natives. In particular, they don't have the  
5 tools to monitor the risks which they have been forced  
6 to assume. Although there may be some economic  
7 spinoffs, I am reasonably sure that most of the native  
8 population will not welcome the risks to their  
9 environment and health, nor the intrusion into their  
10 culture. The active life around the repository is  
11 expected to be about 50 years. This type of boom and  
12 bust industry may not be appropriate for remote  
13 communities.

14 Technical experts must be available to  
15 address all concerns. It is quite possible that dangers  
16 can never be entirely eliminated and therefore managing  
17 nuclear waste must be considered an exercise in risk  
18 management. The community must be fully aware of the  
19 probabilities of death, disablement, health effects and  
20 different kinds of environmental impacts. They must  
21 also be aware of the scale and range over which these  
22 impacts will/could take place. In particular, they must  
23 be aware of the daily emissions, their effects and their  
24 possible cumulative effects.

25 Nuclear technology is very unforgiving







1 when mistakes are made, but people are willing to take  
2 risks when they feel the benefits are worth it. We must  
3 guard against these being short-term benefits for a few  
4 people. Some sort of long-range community planning must  
5 take place to help it re-adjust once the repository is  
6 closed.

7 I understand that there will be about 1100  
8 workers involved in the construction of the depository  
9 for 10 years and when the repository is actually  
10 operating, which will be about 40 years, there will be  
11 about 600 full-time employees. In the remote community  
12 I can't imagine the impacts of that and the impact of  
13 them moving out again. A large center where the nuclear  
14 reactors would probably be a much more appropriate place  
15 to handle that kind of thing.

16 The extent of the underground development  
17 as well as the support industries on the surface add up  
18 to a staggering investment of about \$9-billion.  
19 However, there is some indication that reprocessing is  
20 being considered for the future. This is probably the  
21 dirtiest and probably the most dangerous part of the  
22 nuclear cycle in terms of routine radioactive releases  
23 and it increases the volume of the waste which must then  
24 be handled by 100 times. Does this turn our \$9-billion  
25 investment into \$900-billion?







1                   Even at \$9-billion I have to wonder how  
2 this industry could compete with the safer alternatives  
3 and I have to ask whether Canadians could spend their  
4 money more efficiently by investing in conservation and  
5 alternate energy technologies.

6                   It is quite probable that all countries  
7 wish to rise to our standard of living. The potential  
8 of nuclear energy is such that if you cannot get  
9 universal consensus and regulation in a world that is  
10 far from peaceful then perhaps the best way to handle  
11 nuclear waste is not to create it.

12                  It is possible that an acceptable disposal  
13 method will not be found and/or the perception of risk  
14 by the public will override scientific data. We must  
15 also keep in mind that we are now living in a world  
16 where even a smaller power could quite conceivably  
17 initiate a nuclear war and perhaps all our earlier  
18 aspirations for this industry can never fit into the  
19 framework of our world society.

20                  I strongly believe that a better world  
21 society would evolve around the alternatives.

22                  Thank you.

23                  THE CHAIRMAN: Thanks very much,  
24 Mr. Lawrence. I appreciated your opening remark and  
25 your position of principle on it, but we are more





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1 grateful to you for taking the trouble to indicate a  
2 number of the areas where you think we should look at  
3 questions to be put to AECL, if indeed that is the  
4 mandate with which we've been charged, and it is. So  
5 thank you for the trouble you've gone to to put that  
6 down.

7 Could I ask whether there are questions  
8 to follow up, questions to be more precise or to  
9 clarify?

10 Dr. LaPierre.

11 DR. LaPIERRE: I have two questions to  
12 put to you.

13 The first one is: You mentioned in your  
14 opening remarks and also further on in your report the  
15 possibility of the problem being international. Would  
16 you consider an international body to look into the  
17 management of nuclear waste, the possibility?

18 And my second question is: You indicate  
19 that the ultimate decision should be borne by Canadians.  
20 How would you expect that ultimate decision to be made?  
21 In a democracy we elect people who take decisions for  
22 it. Is that what you mean?

23 MR. LAWRENCE: I would expect -- to answer  
24 your second question first, I would like Canadians to  
25 become in some form, such as environmental assessment







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1 forms, although one which there is full access to all  
2 kinds of experts that people can satisfy themselves that  
3 the questions can be answered that they have concerns  
4 to. And I would suggest that a proper length time be  
5 given for people to ask questions of whatever experts  
6 they wish to and that these experts be made available  
7 and after that proper length of time that a referendum  
8 be held so that the wishes of the people can be known  
9 rather than just interpreted.

10 In regards to your first question, an  
11 international. I also indicated in my opening remarks  
12 that I am not in favour of the nuclear cycle at this  
13 time. I think it's a premature industry. I think it  
14 has a long ways to go before it gets all its kinks  
15 worked out, and I think the world is not a peaceful  
16 enough world for it.

17 I would think that all the various efforts  
18 that have gone into research in disposal of nuclear  
19 waste should be put together at some point and compare  
20 and contrast them and look at -- well, I know there has  
21 been cooperation among the international community but  
22 they should be compared and contrasted to make sure that  
23 they are not -- that the information they have gained  
24 are not conflicting, and they should be -- I also said  
25 that nuclear reactors should perhaps be sited on the





1 places where the materials should be finally deposited.

2 And to answer your question, there should  
3 be international agreement right around the board on how  
4 nuclear waste should be handled, because I think it's  
5 everyone's concern. If it's not being handled properly  
6 and it gets into the environment on major scales then  
7 it's an international problem, it's not just a national  
8 problem.

9 DR. LAPIERRE: Thank you.

10 THE CHAIRMAN: Mr. Van Vliet.

11 MR. VAN VLIET: I have a question, Mr.  
12 Lawrence, on the predictive element of the geosciences.

13 In your opinion, are the geosciences  
14 sufficiently predictive to be able to come to  
15 conclusions as to the life expectancy and the safety of  
16 underground storage?

17 MR. LAWRENCE: I don't know. You know,  
18 the process of predicting earthquakes even in California  
19 is -- you know, they don't really know when the  
20 earthquakes are going to come, so perhaps they don't  
21 understand fully when the stresses are at the point  
22 where they are going to -- things are going to slip.

23 I don't know if they have a big enough  
24 picture, to tell you the truth. I really don't. You  
25 talk about tectonics and things shifting and what effect





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1 will major earthquake in California have on the whole  
2 tectonic picture? You know, if we have a really big one  
3 there, is it going to set things in motion or is that --  
4 are things much more stable than that? I don't know.

5 MR. VAN VLIET: Considering the long  
6 history of stability of the Precambrian Shield, could  
7 certain conclusions be drawn from that into the future  
8 projections?

9 MR. LAWRENCE: You can probably call it  
10 relatively stable, but again I question what is stable  
11 and --

12 MR. VAN VLIET: Stable enough.

13 MR. LAWRENCE: -- and what is stable  
14 enough and can we really look far enough into the future  
15 to say that this is sufficient, this is a good place to  
16 put it and if there is an earthquake it won't open up  
17 all the fractures and the rock and let everything go, so  
18 to speak.

19 MR. VAN VLIET: What areas would you then  
20 see as requiring some more research to acquire a higher  
21 level of knowledge to give it the assurances we would  
22 want to have?

23 MR. LAWRENCE: I -- my honest feeling is  
24 that nuclear waste should be kept in a dry area and if  
25 you are going to put waste into plutonic rocks which







1 have water passing through the fractures and so on in  
2 the rock then your research has to really be good, has  
3 to be sound on whether you can seal up that rock and  
4 whether it's going to last a long time. If your  
5 research indicates you can't put guarantees on that,  
6 then you must be looking at a different rock type  
7 entirely.

8 MR. VAN VLIET: Are there such rock types  
9 in your opinion?

10 MR. LAWRENCE: I'm not an expert on this.  
11 I don't really know. They have been doing experiments  
12 on salts and so on, and they seem to be having some  
13 problems in Germany and Texas and so on with the salt  
14 formations in terms of maybe not being as stable as they  
15 thought it was or water seems to be going through it  
16 faster than they figured it would. I don't really know.

17 That brings me to the question, why we put  
18 it so deep. It's very hard to control, the water  
19 regimes deep in the earth. Perhaps a shallower  
20 depository might have more likelihood of keeping the  
21 water out than something that is so far deep. I can't  
22 answer that question. I have no idea.

23 MR. VAN VLIET: Thank you very much.

24 THE CHAIRMAN: Any other questions?

25 Dr. Wilson.





1 DR. WILSON: You have a section here, the  
2 socio-economic effects, and on top of page 6 you speak  
3 about the necessity to guard against short-term benefits  
4 for few people and also some sort of long-range  
5 community planning must take place to help the community  
6 readjust once the repositories close.

7 Do you have any comments on who are the  
8 key players in making sure that that happens, how that  
9 would be accomplished? I'm not asking for something  
10 definitive but do you have any comments there?

11 MR. LAWRENCE: Well, I think when you look  
12 at a community and how it interacts, you look at its  
13 culture and its history and the resources available to  
14 that community, and if you can see a way that perhaps  
15 the short life of the repository might bring out  
16 developments which would fit into the culture and  
17 history and enable them to make better use of the  
18 resources, then maybe that's appropriate.

19 But I have questions of whether some  
20 culture on the historical areas, whether it could ever  
21 fit into that context. It would have to be the people  
22 for sure that would have to decide whether they wanted  
23 that or not.

24 DR. WILSON: Do you feel that the  
25 proponent would have any responsibility in this area?







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1 MR. LAWRENCE: I would like to think that  
2 everyone has everyone else's interest at heart, and if a  
3 proponent don't honestly feel that they are doing this  
4 community a favour then how can they even begin to be  
5 honest about anything else? I don't know if I can  
6 answer that question to your....

7 THE CHAIRMAN: Dr. Reese.

8 DR. REESE: I just would like a  
9 clarification.

10 I get a little bit concerned when you make  
11 a statement like 'Unless you can be assured that that  
12 community is going to have jobs in perpetuity you  
13 shouldn't go up into that community.' Then as you are  
14 talking I'm thinking of all sorts of things that have  
15 happened even in my lifetime. They open up an air force  
16 base, then it closes; factories get opened and they get  
17 closed; communities rise and die. I mean, this is part  
18 of living.

19 I don't see how anybody can make a  
20 projection that for the next 500 years a certain  
21 community is going to continue to benefit, if you will,  
22 from a facility. You are talking about Canada that  
23 hasn't even existed 500 years.

24 MR. LAWRENCE: Okay. I guess what I have  
25 in mind when I'm making those kind of statements is --





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1 particularly in Saskatchewan the Precambrian Shield  
2 exists in our north in what I recall remote communities.  
3 And these communities, they have no -- at present they  
4 really don't have much use for nuclear power. You know,  
5 from the resources they have they can produce all the  
6 power they need without becoming involved with it.

7 And what they would want to have to do  
8 with nuclear wastes from all over the country I don't  
9 know, but I can't see any reason why a community would  
10 want to take the risk of having all that stuff come into  
11 the community.

12 MR. REESE: Well, I agree with you that I  
13 think the community, if there is already a community,  
14 the question often arises: Is there a community or is  
15 this a presumed community or is this a potential  
16 community? You know, if there is a community they  
17 certainly should be free to make a choice, no arguments.

18 MR. LAWRENCE: I don't know. I think the  
19 people who receive the benefits of nuclear power usually  
20 live until large centers, and they can accommodate the  
21 kind of technology...

22 DR. REESE: That's right, so you should  
23 dig a hole in the middle of Toronto and bury it there.  
24 Is that what you are suggesting?

25 MR. LAWRENCE: Well, some people might





1 like to see that, I suppose.

2 We still have to keep safety in mind. But  
3 I would like to see a community develop in a way that's  
4 appropriate to the resources and to their culture. I  
5 don't like to see things thrust upon them.

6 DR. REESE: I can't argue with that  
7 feeling.

8 On the other hand, communities -- if you  
9 had always used that criteria, no changes would have  
10 within the last few hundred years if you always do  
11 things in accordance with the way of life of the time,  
12 the standards of the community.

13 MR. LAWRENCE: Well, these things have to  
14 be taken --

15 DR. REESE: -- because I want to be  
16 educated.

17 MR. LAWRENCE: Well, when a proponent  
18 comes to the community and he suggests that certain  
19 developments and I think the community has to have some  
20 grounds to say nay or yeah to this development. It's up  
21 to that community whether they want to go in that  
22 direction or not inevitably.

23 DR. REESE: And certainly the method that  
24 is used in doing this these things in Canada is exactly  
25 that.







1 MR. LAWRENCE: (Witness nods head.)

2 DR. REESE: Do you approve of the method  
3 that's being used?

4 MR. LAWRENCE: I think it's still  
5 evolving. We certainly still have problems with our  
6 environmental assessment process. I think that's been  
7 very evident lately. The world just keeps growing and  
8 growing and we've got to learn to cooperate with each  
9 other and we can't go on pushing over people that don't  
10 want to be pushed on.

11 If I -- there's certain things I value and  
12 I don't want those things that I value destroyed. And I  
13 think communities have that kind of feeling for where  
14 they are.

15 THE CHAIRMAN: Thanks very much indeed  
16 for coming down from Prince Albert for the meeting and  
17 for taking the trouble to prepare that statement for us.  
18 ---Mr. Lawrence withdraws

19 THE CHAIRMAN: The final person I have on  
20 my list for this evening is Chief Ed Benoanie of the  
21 Hatchet Lake Band. I wonder if you would come forward,  
22 please.

23 PRESENTATION BY CHIEF BENOANIE:

24 Thank you very much. First of all, I  
25 apologize. I don't have any written presentations for





1 the panel. That's a tradition of Indian people, it's  
2 all up here, not on paper.

3 First of all, I want to do some  
4 introduction. As Indian leader of my community I  
5 represent 900 people and I also I'm an active member of  
6 the FM Double on the members of Environment Committee  
7 and also I've been appointed a task force chairperson  
8 for Saskatchewan Indian People.

9 It's unfortunate, if I had a translator  
10 here for the Panel I would speak my language, but they  
11 don't have a translator I see, and from sitting back  
12 there a lot of these words you have spoken, questions  
13 you have asked, I do not speak that language. And if I  
14 may ask the Panel if they can be very -- tear down in  
15 smaller words where I can understand. I can speak  
16 English but not the kind of English you guys speak.

17 One year since the spill -- with the  
18 consent of my people at the Hatchet Lake Band Reserve,  
19 you know, it's been a long year, I've been into panels,  
20 I've been into discussions with government agencies, and  
21 I feel like I'm still being studied as I live across 25  
22 miles from a big industry whose got a habit of spilling  
23 contaminated water in our lake. Unfortunately it just  
24 happened once but recently it's been contained, but once  
25 is just about enough.







1                   And to be honest and true about the waste  
2 disposal, they asked me as individual member of my band  
3 and being a leader there, speaking to my Elders, they  
4 are all opposed to what you are proposing on behalf of  
5 the government.

6                   The reasons for Hatchet Lake involvement  
7 and based on the environment concerns from uranium  
8 mining activity in a traditional Dene land, profound  
9 concerns for the future of a Dene community people.

10                  Presentations is based on statements of  
11 the Elders at Hatchet Lake, Dene. Technical aspects are  
12 not the focus of this presentation. Lots of technical  
13 people to take care of these details. We do not have  
14 the technical capability.

15                  Presentation is based on bigger issues and  
16 moral responsibilities. Panel mandate is limited and it  
17 cannot address questions of energy policy or military  
18 application or nuclear technology.

19                  Elders have made it clear that we cannot  
20 look only at nuclear waste, waste or product, of a whole  
21 nuclear cycle products and government, policy and public  
22 compliance.

23                  When we spoke to the Elders last week  
24 what's their thoughts on the disposable nuclear waste in  
25 our country in Canada which existed more than 500 years,





1 I may say, because we've been here before the coming of  
2 white man, and they have been very strongly opposed to  
3 what you are trying to propose to the Canadian people of  
4 this country.

5 You have made statements like: Why do you  
6 take out things you cannot put back safely? And after  
7 looking at uranium mining process used as weapons and  
8 power reactors, foolishness in society is to think we  
9 can dig up what the Creator had buried. And one  
10 criticism came from the Elders was: Satan inspired  
11 these people to dig up the gold, uranium that God had  
12 sent and buried.

13 Should we be asking Satan for an answer to  
14 waste disposables? Examples: Cigar Lake up to 60 per  
15 cent pure uranium, buried and sealed not by nature and  
16 by Creator. AECL wants to duplicate that. What makes  
17 them think they can do a good job as Creator?

18 We cannot be certain that any part of the  
19 process from the mines to the waste is safe. The only  
20 wise action is to stop. If it can done in a way that is  
21 safe for the people and environment then nuclear might  
22 be okay.

23 That's a very general comment from my  
24 Elders and my presentation in this forum, and I've been  
25 advised by Elders that, you know, if you cannot put







1 something away safely where you took it from, you can  
2 almost make deals with Satan that you can take out what  
3 God had created and put it back as safely the way it was  
4 put there in the first place.

5 We are six mines; one existing in our  
6 area, six deposits, a range of 40 miles in the area who  
7 have economic base on fishing and trapping and hunting  
8 in the area and a company getting a habit of making  
9 spills into our environment.

10 Yes, we do not have jobs in our community.  
11 My people are 98 per cent on welfare, a population of  
12 950 people, booming industries like Chemical and Cigar  
13 Lake, Midwest, et cetera.

14 It's very disturbing and discouraging, our  
15 young people in our community when you see almost like  
16 city lights across the lake when you can see lights are  
17 expanding and expanding and our reserve just seems to be  
18 the way it is.

19 Come up here in your cities and  
20 communities, your meetings, I learn how to flush toilets  
21 and turn taps. Back home I run for my water down the  
22 lake which is I drink my coffee out of. That's what we  
23 are protecting when we talk about environment.

24 We, as Indian people, 900 miles away from  
25 home today, I bring a strong message to the Panel: If







1 you cannot put away the disposable dangerous, whatever  
2 you want to call it, why bother taking it out in the  
3 first place?

4 It's a very community, my community  
5 reserve, population of 1800 -- close to range of 500  
6 young people, very few Elders. Talk about a young  
7 country, is a very young community who have been  
8 residing there for the last 30 years on the reserve  
9 which existence in '67, 1967, but our people have been  
10 travelling the routes, the lakes for hunting and  
11 trapping for last thousands of years.

12 So it's very unfortunate I didn't bring  
13 nothing to the Panel, but if it's okay with the Panel I  
14 can provide them with written presentation in the near  
15 future for more consideration.

16 With that, thank you very much.

17 THE CHAIRMAN: Thank you very much, Chief.  
18 You don't have to put a written contribution in, we are  
19 very glad to hear from you, as we have tonight. If you  
20 would like to, however, we would be glad to get it. But  
21 we've listened to you. We've got a recording of what  
22 and we can read again your words for tonight, I can  
23 assure you.

24 Could you tell me, particularly for those  
25 of us who don't come from this part of the country, you





1 are about 900 miles north of here, did I hear you say?  
2 Where is that? If you can just locate it a little bit I  
3 would be interested in knowing where your reserve and  
4 where your band is.

5 CHIEF BENOANIE: Okay, a little education  
6 here. If you can add up 235 kilometers to Prince  
7 Albert, another -- is it 135 kilometers to the Prince  
8 Albert, plus 235 to LaRonge, plus another 460 to  
9 Wollaston Lake, then another 40 kilometers across the  
10 lake.

11 THE CHAIRMAN: It's across the far side  
12 beyond Wollaston Lake.

13 CHIEF BENOANIE: That's right, Yes.

14 THE CHAIRMAN: Okay. Now I've got it  
15 located. Thank you very much indeed. It helps just to  
16 get some feel for it, kind of territory you have. And  
17 that's the mine you are talking about, the one the other  
18 side of the lake?

19 CHIEF BENOANIE: Yes, it's a very  
20 beautiful country, want to keep it that way.

21 THE CHAIRMAN: Right.

22 Dr. LaPierre.

23 DR. LAPIERRE: I also want to thank you  
24 for taking the time to come from your community to meet  
25 with us.







1 I just have one question to you ask you  
2 concerning the number of people in your community who  
3 actively participate in hunting and fishing. Is it the  
4 activities of the entire community on a regular basis?

5 CHIEF BENOANIE: Yes, it is. It's our  
6 bread and butter on the table. Like, you know, the  
7 welfare they give you up there, the same rate we get in  
8 Saskatoon but the food is double up there. In terms of  
9 transportation -- and in order to facilitate your table  
10 with the band, what Indian Affairs give you, to make an  
11 adequate meal for our children you to have get it out in  
12 the environment for big family.

13 THE CHAIRMAN: Any other questions the  
14 members would like to make?

15 Mr. van Vliet.

16 MR. VAN VLIET: Chief Benoanie, what  
17 educational facilities are available to your band and  
18 your members and your children to help them become more  
19 part of some of these developments?

20 CHIEF BENOANIE: We have a school there  
21 that goes up to grade 9 and to upgrade your education  
22 you have to move to Prince Albert away from your  
23 families for the whole year, and not speaking of  
24 Christmas and Easter to come back for visiting the  
25 family, and it's a very big change for young people.





1                   We have 20 -- I would say about 25 young  
2 people out there in Prince Albert now trying to upgrade  
3 their education and living the city life which they  
4 weren't used to when they were younger. It's a very big  
5 change and in the past it's been very hard for people to  
6 move out of the communities.

7                   Today we've been encouraging our young  
8 people and asking them to stay in school regardless how  
9 hard it is, and so far we haven't seen any returnees  
10 before Christmas yet. Usually the majority has probably  
11 returned from Prince Albert and live at home and pretty  
12 well do nothing. And when the mines say you need a job,  
13 you have to have a grade 10 education to get a job in  
14 the mine.

15                   THE CHAIRMAN: May I just to follow-up on  
16 that, if I can cut in, and I don't know whether this is  
17 feasible or not, whether it's possible or not.

18                   Would it help you if some of the industry  
19 which is in the area try to give more training to your  
20 people without having them leave to Prince Albert, could  
21 help with some of the education or training on the job  
22 or perhaps they do a little bit of that now. Could you  
23 tell us whether there is any of that on-the-job training  
24 or extra help on education?

25                   CHIEF BENOANIE: Yes, it's fortunate that





1 it had to take a spill to wake them up. After a spill,  
2 okay, here is training for your people, we'll start  
3 hiring in February, we are going to train them for six  
4 months to work in mills and how to dissolve uranium from  
5 liquid and, you know, it took one spill, one major spill  
6 before they do that. What happened to the rest of 15  
7 years in the past, where they cannot convince me until  
8 to date that they can't say they have to have an  
9 adequate education, which is grade 10 maximum.

10 And I don't believe that because I worked  
11 in a mine for four and a half years before I became  
12 leader of my community not knowing what the industry is  
13 like, just for desperation on the job where you had --  
14 when somebody mentioned here you have to either pick a  
15 shovel or a picker, and they put me six months in the  
16 area and finally I toughened through that and then they  
17 upgraded me and I run the mill like any grade 12  
18 graduate could, and I only have grade 5 in my years  
19 past.

20 THE CHAIRMAN: Thanks.

21 Dr. Wilson.

22 PRESENTATION BY MR. KANEEN:

23 Mr. Chairman, apparently I'm supposed to  
24 add something to this.

25 My name is Jamie Kaneen, I'm the







1 environment and development advisor for the Hatchet Lake  
2 Band, and I guess I add a little bit of background to  
3 that Elders Workshop that we did just last week.

4 I understand there's been a fairly  
5 consistent complaint from the intervenors regarding the  
6 funding and the short deadlines for the first phase of  
7 this process. And maybe all I have to do is add our  
8 voice to that, that it does take us sometime to get  
9 things working such as this -- well, particularly on  
10 issues such as this where the leadership really has to  
11 come from the community Elders. And it's not up to me  
12 to prepare a brief and say, 'Well, this is our position  
13 on this, this is the Band's position.' It really has to  
14 come from the moral leadership in the community on  
15 something that is that important to people's lives and  
16 the future generations.

17 So with that said, I think it's important  
18 to focus on the terms of reference of your Panel, and  
19 really the overall message that we got from the Elders  
20 was that if you are not going to look at the whole  
21 nuclear cycle, if you are not going to look at the place  
22 of nuclear energy in Canadian society, if you are not  
23 going to look at every step along the way from the  
24 mining through to the waste disposal, then there is  
25 really no point continuing with this process and that,





1 you know, maybe the best thing to do is to send it back  
2 to the Ministers and say that this mandate is not  
3 workable, we can't address the technical issues if there  
4 are more fundamental problems being left aside.

5 And that relates to comments that other  
6 intervenors have made about even the appearance of a  
7 safe disposal mechanism leading to the creation of more  
8 waste when it is, as we've kept hearing, more than  
9 uncertain that we can deal safely with what we have  
10 already.

11 The Elders were a little bit surprised to  
12 find out that people had been mining uranium for as long  
13 as they have and using it without any notion of what  
14 they would do with the wastes.

15 I'm afraid to say that they saw it as  
16 fairly typical of white behaviour that this could be  
17 done and carried on that way. But really that is the  
18 testimony that they gave us.

19 And, again, really I think it's a little  
20 bit problematic that people -- that other intervenors  
21 have objected to the limitations in the Panel's terms of  
22 reference and then continue to -- gone on to identify  
23 technical problems or technological problems and really  
24 gone along with the process to that extent, and the  
25 message that I'm here to relay really is that that's not







1 the right way to go about doing it.

2 I'm wondering right now if the Panel has  
3 any intention of having some of the documentation, maybe  
4 at least an executive summary of some of its proceedings  
5 and so on, translated into the languages of the various  
6 peoples involved, and I understand that there are over  
7 six provinces, probably at least a dozen First Nations  
8 involved. And perhaps recognition of that and  
9 recognition of the fact that much of northern Ontario,  
10 Quebec, Manitoba, Saskatchewan is not reserve land but  
11 is in use by native nations and that they have treaty  
12 rights on that land for the most part.

13 So maybe you could consider having some  
14 of the documentation translated into Creed, Ojibway,  
15 Micmac, Montinae, Mohawk, Dene.

16 That's probably all that -- no, there's  
17 one more point that I think has to be addressed and that  
18 is the proponent's role thus far in that it -- and this  
19 is, I'm afraid, a little bit more of a technical point,  
20 but it is related to the whole process and this is not a  
21 reflection so much on FEARO as on the process that the  
22 Department of Energy has set up, and the again the  
23 mandate that the Ministers have given the Panel.

24 And that is that AECL's interests, I'm  
25 afraid, is not that of long-term safety of all Canadians





1 or even the Canadians that are most directly involved or  
2 situated near the final disposal site. Rather, it is to  
3 make themselves a little bit of a better name as a  
4 corporation by selling some of their product. This  
5 requires, as they have pointed out themselves, more of a  
6 public relations approach than an actual public safety  
7 approach to waste management.

8 And again, if they can point to at least  
9 an apparently successful waste management program then  
10 their reactor business will be much more saleable, and  
11 I'm afraid that the effects that that could have and  
12 could have had on their research and the process, you  
13 know, over the 13 years preceding the Panel's  
14 appointment, or 12 years, could have a crippling effect  
15 on their shall I say objectivity.

16 THE CHAIRMAN: I wouldn't be prepared to  
17 comment on AECL's role. I just remind you that it's our  
18 job to give advice on -- after a lot of consultation --  
19 on the safety and the acceptability of that or  
20 alternative arrangements and we intend to do our very  
21 best with a lot of help to do just that.

22 MR. NEEN: But there again, the grand total  
23 of what \$750,000 in intervenor funding does not compare  
24 well with the amount that AECL and Ontario Hydro spent  
25 developing thus far and that their objectivity in this







1 process, their goals are not necessarily those that the  
2 public would accept.

3 THE CHAIRMAN: Point noted, but we do have  
4 access to other help as well as that and we are  
5 certainly getting it. We've got a scientific review  
6 group and we'll be getting other help as well as that  
7 from within the Panel which will take us at least some  
8 of the way that you would want.

9 Any other questions put either to the  
10 Chief or to Jamie Neen.

11 Dr. Wilson.

12 DR. WILSON: I don't know which one wants  
13 to answer, but I think, Chief, you mentioned about 95  
14 per cent of the people are on welfare. I presume from  
15 that then that there are very few, if any, native people  
16 employed at the industry that is up there now.

17 CHIEF BENOANIE: I'm glad you asked.  
18 There's only two of them.

19 DR. WILSON: Thank you.

20 THE CHAIRMAN: No further questions.  
21 Thank you very much indeed, Chief, for coming that  
22 distance to speak to us, and Jamie Kaneen also.

23 CHIEF BENOANIE: Thank you very much.  
24 It's a great help to us.

25 ---Panel withdraws







1 THE CHAIRMAN: This is the last person I  
2 have listed to speak this evening, but if there is  
3 anyone else present who would like to address us, we  
4 would be more than pleased to hear from you.

5 If not, could I thank you for taking the  
6 time on what was, at least when we came in, a sort of a  
7 snowy night, after all that's Canada and that's winter,  
8 to come and spend with us this evening, to listen with  
9 us, to agonize a bit with us as well and to thank  
10 particularly the people who have made the presentations  
11 and gone to the obvious trouble they have to share their  
12 views and their concerns with us. That will help us in  
13 our work a great deal.

14 Please, if you wish, stay a bit longer,  
15 there may be a bit of tea and coffee left outside. I'm  
16 getting a nod from someone at the back that there is  
17 still a bit of tea and coffee there. Do stay for a bit  
18 longer, chat amongst yourselves, give us a chance to  
19 chat with you a little bit more informally than we can  
20 do with tables and audiences. We enjoy that and I hope  
21 that you'll take advantage of it as well.

22 Thank you very much indeed.

23 ---Whereupon at 9:10 p.m. the hearing was adjourned to  
24 be re-convened at 9:00 a.m., Wednesday, November 21,  
1990.

25 \* \* \* \*





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This is to certify that the foregoing is a true and accurate computerized transcription of the proceedings to the best of my ability and skill.

*Sandra Nazarec*  
SANDRA M. NAZAREC, C.S.R.









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ENVIRONNEMENTALES

Held at/Auditions tenues au:  
Holiday Inn  
Saskatoon, Saskatchewan

Date: Mercredi le 21 novembre 1990  
Wednesday, November 21, 1990

Volume: 17

B E F O R E / D E V A N T :

MR. BLAIR SEABORN

CHAIRMAN

DR. LOIS WILSON

MEMBER

MR. PETER van VLIET

MEMBER

DR. LIONEL REESE

MEMBER

DR. LOUIS LAPIERRE

MEMBER

---

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DES EVALUATIONS  
ENVIRONNEMENTALES  
DE LA GESTION DES DECHETS  
DE COMBUSTIBLES NUCLEAIRES

SCOPING MEETING  
REUNIONS DE DETERMINATION DE L'IMPORTANCE DES PROBLEMES

Hearing held at the Holiday Inn,  
Saskatoon, Saskatchewan,  
on Wednesday, November 21, 1990,  
commencing at 9:00 a.m.

VOLUME 17

B E F O R E :

MR. BLAIR SEABORN	Chairman
DR. LOIS WILSON	Member
MR. PETER van VLIET	Member
DR. LIONEL REESE	Member
DR. LOUIS LAPIERRE	Member







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A P P E A R A N C E S

TOM EREMONDI

Pokebusters Citizens  
Coalition

NEIL SINCLAIR

Concerned Citizen

PETER PREBBLE

MLA  
Saskatchewan Legislature





(ii)

I N D E X   O F   P R O C E E D I N G S

P R E S E N T A T I O N   B Y :

P a g e   N o .

Tom Eremondi	6
Neil Sinclair	13
Peter Prebble	16







1 ---Upon commencing at 9:10 a.m.

2 THE CHAIRMAN: Good morning, ladies and  
3 gentlemen, and welcome to this second morning session in  
4 Saskatoon of the scoping meetings which are being held  
5 by the Environmental Assessment Panel charged with the  
6 examination of the nuclear fuel waste management and  
7 disposal concept.

8 Could I introduce to you the members of  
9 the Panel who are with me this morning? At the extreme  
10 left of the table, left, your right, Mr. Peter van Vliet  
11 of Regina, a mechanical engineer who is a member of the  
12 Senate of the University of Regina.

13 To my immediate left, Dr. Louis LaPierre  
14 from Moncton, professor in the Department of Biology at  
15 the University of Moncton and chairman of the  
16 Environmental Council of New Brunswick.

17 To my immediate right Dr. Lois Wilson of  
18 Toronto, President of the World Council of Churches and  
19 co-director of the Ecumenical Forum of Canada.

20 The vacant seat will be occupied in a  
21 moment or two by Dr. Lionel Reese of London, Ontario, a  
22 physician at St. Joseph's Hospital in that city and a  
23 professor in the Department of Diagnostic Radiology and  
24 Nuclear Medicine at the University of Western Ontario.

25 My name is Blair Seaborn. I'm chairman of





1 the Panel and I'm from Ottawa. I'm retired, but I  
2 served previously as Deputy Minister of the Environment  
3 and Canadian Chairman of the International Joint  
4 Commission.

5 Panel secretariat members are also here  
6 and I would like to introduce them, Bob Greyell, who is  
7 at the table to the left of this central one, and at the  
8 back of the room is Susan Toller, environmental analyst  
9 and Ms. Susan Flanagan, both members of the staff who  
10 will be more than happy to assist you in anything, any  
11 help you may require in the course of this morning's  
12 session.

13 The review is being conducted in the  
14 accordance with the Federal Environmental Assessment and  
15 Review Process. The Panel has been asked, in part, to  
16 examine the nuclear fuel waste management and disposal  
17 concept, a proposal for permanent disposal of used  
18 nuclear fuel deep in the granitic rock of the Canadian  
19 Shield.

20 Let me say a few words about the Panel's  
21 mandate. The terms of reference state that the Panel is  
22 to review the safety and acceptability of the concept  
23 for geological disposal, one which I just mentioned,  
24 geological disposal of nuclear fuel waste in Canada as  
25 put forward by Atomic Energy of Canada Limited.





1                   In addition to the AECL proposal, we shall  
2 examine a broad range of nuclear fuel waste management  
3 issues, including long-term management, transport and  
4 environmental, social and economic effects. We shall  
5 look at approaches to nuclear fuel waste management and  
6 disposal being developed elsewhere in the world. Since  
7 site selection will not occur until the disposal concept  
8 has been accepted as safe, the Panel will not consider  
9 any specific sites but it will review the potential  
10 availability of sites and the methodology and criteria  
11 required for their selection.

12                   I would like to say a few words also about  
13 what is not in the panel's mandate and will not be  
14 addressed this review: The energy policies of Canada  
15 and the provinces, the role of nuclear energy within  
16 these policies including the construction, operation  
17 and safety of new or existing nuclear power plants, fuel  
18 reprocessing as an energy policy, and military  
19 applications of nuclear technology.

20                   I would like to make it clear, however,  
21 that the Panel is very much aware of the broader  
22 concerns related to the use of nuclear materials and the  
23 use of nuclear power for the generation of electricity.  
24 The Panel has been urging a broader review of the  
25 comparative environmental implications of the various







1 methods of generating electricity, and I'm pleased to be  
2 able to say that that review, initial steps for that  
3 review have now been taken, the Federal Department of  
4 Energy has written to provincial counterparts in energy  
5 and environment ministries and to a wide range of energy  
6 and environment interest groups asking for their early  
7 comment on draft terms of reference for such a broader  
8 review. I hope it will get underway before much more  
9 time has passed.

10 The purpose of these scoping meetings is  
11 to allow participants to identify issues that need to be  
12 addressed in the environmental impact statement that  
13 will be prepared by AECL. The Panel is not requesting  
14 the presentation of opinions on the substance of the  
15 disposal concept at this time. Public hearings will be  
16 held later to discuss whether AECL's proposal is  
17 acceptable.

18 Following these meetings, the series of  
19 scoping meetings, the Panel will prepare draft  
20 guidelines for the preparation of the environmental  
21 impact statement. Those will be made public in draft  
22 form and we shall be inviting public comment over a  
23 period of at least 30 days.

24 Upon receipt of the guidelines in final  
25 form AECL will start the preparation of its





1 environmental impact statement, a process which is  
2 expected to a year, year and a half, possibly even more  
3 than that, and will then, when it is completed, submit  
4 its statement to the Panel. The Panel will, in turn,  
5 distribute it to the public.

6           Once we are satisfied that AECL has  
7 addressed satisfactorily all the items identified in the  
8 guidelines we will hold public hearings; participants  
9 will be asked to discuss the acceptability of AECL's  
10 disposal concept in detail at this stage of the review.  
11 The Panel will consider all comments submitted to it and  
12 as its final act will prepare its report to the  
13 Ministers of Environment and of Energy, Mines and  
14 Resources.

15           Could I ask those who have registered to  
16 speak to attempt to summarize their concerns in 15  
17 minutes, unless they have previously requested an  
18 additional 10. We shall pay equal attention though to  
19 the written and to oral comments.

20           The Panel may, after the conclusion of  
21 each presentation, ask questions if we require any  
22 clarification of what the participants have had to say.  
23 If you would like to make a presentation, if you haven't  
24 yet spoken to the secretariat perhaps you would do so,  
25 to any mmebers of the secretariat in order to make sure







1 that your name is on the list.

2 The Panel will accept written submissions  
3 up to the end of this month, that is, up to and  
4 including November 30th, 1990.

5 With this brief introduction to our  
6 activity for this morning, I would like to call on our  
7 first participant, Mr. Tom Eremondi, representing  
8 Pokebusters Citizens Coalition.

9 If you could come up here and sit at the  
10 table and we can be close to you and the audience can  
11 also see and hear you.

12 PRESENTATION BY MR. EREMONDI:

13 Good morning, ladies and gentleman, and  
14 good morning to the Panel members. I'm glad to see that  
15 you've been given the traditional prairie welcome to  
16 Saskatoon.

17 I would like to start off with an  
18 introduction. My name is Tom Eremondi, I'm a member of  
19 the Pokebusters Citizens Coalition. It is a coalition  
20 of 30 community groups in Saskatoon spanning  
21 environmental, labour, professional, health and student  
22 groups in Saskatoon concerned with nuclear issues and  
23 particularly the Slowpoke, which has been proposed for  
24 the University of Saskatchewan campus.

25 Our reason for the involvement in the





1 scoping sessions and essentially the hearings is our  
2 concern about the potential rubber stamping of any  
3 nuclear projects that might come to Saskatchewan. That  
4 is our main reason of concern.

5 I would like to preface my comments with  
6 the concern that I raised at the open house in June when  
7 the FEARO had their open house here, that we are  
8 concerned that Saskatchewan is even included in this  
9 process. We do not produce high level nuclear waste and  
10 therefore we do not feel that we should be included in  
11 the process. There is potential concern and of course  
12 suspicion, and I believe we have the right to be  
13 suspicious, that because we are included in this process  
14 we may eventually be chosen as a site or eventually be  
15 considered as a site, and either chosen or considered as  
16 a site is something that raises concern amongst both my  
17 groups and the constituents that I believe we serve.

18 With that in mind, one of the things that  
19 we are recommending that the future hearings do is not  
20 take place in Saskatchewan. We don't believe there is a  
21 place for them in Saskatchewan. We, as a province, do  
22 not feel it is our place to accept someone else's  
23 nuclear waste and therefore we would encourage the  
24 hearings not to come to Saskatchewan and essentially not  
25 consider or choose Saskatchewan as a site. I know that







1 may be a long way down the road, but that's an initial  
2 concern that I feel is necessary as a preface.

3           There is a question that I've been asked  
4 to raise and that is one that is lacking in scoping  
5 sessions and in the scope of these hearings, and that is  
6 site specifics. And I know you've just said that it's  
7 not your mandate to choose specific sites, to consider  
8 specific sites. I feel that that is wrong. I think you  
9 cannot do a fair and equal environmental impact  
10 statement without an environment, and basically all we  
11 are asking to do in this case is to approve or not  
12 approve a concept. Therefore, there can be no  
13 environmental impact statement made if there is no  
14 specific environment.

15           With that in mind, I would like to suggest  
16 that before the hearings take place that maybe specific  
17 sites be determined so that those people of those  
18 specific sites can have a right to determine and can  
19 also be involved in any social impact analysis.

20           I would also like to reiterate a strong  
21 opinion of our group, that under the current terms of  
22 reference and conditions that approval of the concept  
23 should definitely not be the green light for future  
24 nuclear development. We believe that all we are doing  
25 in terms of these hearings is approving or disapproving







1 of a concept to dispose of nuclear waste, that is, we  
2 are recognizing that there is a problem with nuclear  
3 waste and we are looking at one of the many possible  
4 solutions for disposal of that nuclear waste. There  
5 should be no effect in terms of future nuclear  
6 development to come out of these hearings. And I agree  
7 with the Panel in its scoping in those terms.

8           Although I would also like to suggest that  
9 if future nuclear development will be an environmental  
10 impact of these hearings then there must be some sort of  
11 either parallel level of hearings or at least something  
12 included in these hearings that would have a study, the  
13 nuclear energy issues. And I know, again, that that is  
14 not one of your mandates but it's something I feel  
15 important again for the reasons because I feel any  
16 future nuclear development could be considered as an  
17 environmental impact; that is, that if this concept is  
18 approved the nuclear industry may have the mandate to  
19 say, 'We've solved one of our major problems.'.

20           We in Pokebusters don't believe that's  
21 the case. We believe that beyond the waste there are  
22 several other problems that that are too lengthy  
23 mention.

24           There is another point that I would like  
25 to bring up, and it's that our suggestion from





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1     Pokebusters, that the process and length of these  
2     hearings be expanded. We feel that it's highly unfair  
3     that the proponent, Atomic Energy of Canada Limited, has  
4     been given 12 years, I believe 1977 or 1978, when they  
5     announced that they are going to begin studying the  
6     concept. They have been given 12 years and several  
7     hundred millions of dollars to study the concept.

8             Environmental groups and community groups  
9     such as a Pokebusters have been given a few short months  
10    and offered just a fraction of what the AECL has  
11    received in terms of money. We feel it's highly unfair.  
12    It puts us in a disadvantaged position to study the  
13    concept and to develop any full recommendations, and  
14    that's probably why my comments today aren't specific  
15    because a group such as ours does not have the resources  
16    to offer a full analysis of this concept, to wit, we are  
17    built on volunteers, and we would encourage more funding  
18    and more time be made available so that community groups  
19    such as Pokebusters can offer a more detailed analysis  
20    of the concept through the hearing process.

21            Finally, I would like to conclude that  
22    there must be discussion of the ongoing production of  
23    these wastes, that every day as nuclear reactors  
24    operate, nuclear wastes are produced. We in Canada must  
25    be asked if we want to continue producing those nuclear







1 wastes while their concept is being studied and  
2 approved. And I believe that there is a 20-year time  
3 length from the plan before this concept will be fully  
4 approved and built and tested. And I think we should  
5 follow the recommendation of the 11th Hour Report, which  
6 recommended that there be a moratorium placed on nuclear  
7 reactor construction until this concept has been tested.

8 Again, I know that's not in your mandate  
9 but I feel it's important again, reiterating my  
10 comments, about the possible environmental impact of  
11 future nuclear development.

12 With that, I'll close my comments. These  
13 are brief comments just meant to enlighten the Panel,  
14 express our concerns, the concerns that we have as both  
15 members of Saskatoon and Saskatchewan, and I thank you  
16 for this opportunity.

17 THE CHAIRMAN: Thanks, Mr. Eremondi. Can  
18 I just comment on two small matters before opening to  
19 any questions that the Panel may have.

20 We have heard previous concerns expressed  
21 about the time which is available for groups such as  
22 yourselves, and we have determined amongst ourselves  
23 that for the next phase, the more substantive phase, we  
24 shall make an effort to give a good bit more lead time  
25 both as to the funding that's available and for the





1 preparation.

2 So if this has been a little crowded for  
3 you on this occasion, I think you will find if you are  
4 interested in taking part in the next phase, you will  
5 have more opportunity to study.

6 The second, while you are quite right in  
7 saying we do not have -- we are not looking at specific  
8 sites at this stage, nonetheless, you are aware, I  
9 think, that we have been asked to look at the  
10 methodology and some of the criteria which might be  
11 applicable to site selection. We have received a number  
12 of comments along the way which are relevant to that  
13 part of our task and we will certainly be addressing  
14 that one seriously, if not the specific site at least  
15 how you would go about looking at sites.

16 Could I ask whether there are any  
17 questions which members of the Panel would like to put  
18 to Mr. Eremondi?

19 Dr. LaPierre.

20 DR. LAPIERRE: Thank you for your  
21 presentation, Mr. Eremondi.

22 Regardless of what happens to the waste,  
23 or nuclear production of waste in the future, we do have  
24 some waste accumulated now. I wonder if you have any  
25 comments regarding the preparation of a central facility





1 to store this waste versus the maintenance of the waste  
2 in the area or the present location where is it stored  
3 or produced?

4 MR. EREMONDI: No, I did not, and the  
5 mandate that I was given from my group did not include  
6 that discussion.

7 THE CHAIRMAN: Thank you.

8 Any other questions for Mr. Eremondi? If  
9 not, I thank you very much. We've noted your comments  
10 and from the group you represent.

11 ---Mr. Eremondi withdraws

12 THE CHAIRMAN: Could I call next, please,  
13 on Mr. Neil Sinclair.

14 PRESENTATION BY MR. SINCLAIR:

15 Good morning. My name is Neil Sinclair.  
16 I'm not a scientist or a specialist engineer in any  
17 aspect, but I'm just a concerned citizen. And my  
18 concerns lay with the radioactive pollution that the  
19 nuclear industry has been committing to this planet for  
20 the past 40-plus years and the irresponsible actions of  
21 this industry. Also looking at the nuclear waste issue,  
22 the international aspect of it, we are exporting this  
23 technology in our uranium around the world to countries  
24 that are not capable compared to us to look after this  
25 radioactive waste, such as Pakistan, such as India, and







1 we have to take responsibility for our actions in that  
2 sense.

3 And I feel also that the public hearings  
4 to be held in the future should be as open as possible  
5 because we cannot look at one area of the nuclear fuel  
6 cycle without affecting the other areas if you make a  
7 major decision.

8 For instance, if this disposal concept is  
9 proven to be unsatisfactory and there is no way have of  
10 disposing of this waste, our country should seriously  
11 look at halting nuclear power generation to stop  
12 creating more waste that we can't get rid of, and that's  
13 all I have to say.

14 THE CHAIRMAN: Questions from the Panel.

15 DR. WILSON: You mentioned the countries  
16 that we export reactors to and our responsibility for  
17 something there. Are you suggesting that we should --

18 MR. SINCLAIR: Well, when we export our  
19 technology and our uranium to developing countries --

20 DR. WILSON: So we should take their  
21 waste?

22 MR. SINCLAIR: No, I'm not saying that.  
23 I'm saying we are contributing to those countries  
24 creating waste that they may not be able to handle and  
25 if they can't handle in their part of the world what





1 will they do with it? In the end it could affect  
2 Canadians. We all live in the earth; it's a global  
3 community.

4 THE CHAIRMAN: Dr. LaPierre.

5 DR. LAPIERRE: Thank you, Mr. Sinclair.  
6 You indicated that waste was a problem that was an  
7 international problem. Do you think the solution should  
8 be -- to waste management should be integrated into an  
9 international body for monitoring and control?

10 MR. SINCLAIR: That's not a bad idea,  
11 possibly it could be looked into.

12 THE CHAIRMAN: Dr. van Vliet.

13 MR. VAN VLIET: Mr. Sinclair, you identify  
14 in your paper that this containment must be a hundred  
15 per cent foolproof. Is there anything in life that is a  
16 hundred per cent guaranteed? Is it reasonable to expect  
17 that?

18 MR. SINCLAIR: Two things that are a  
19 hundred per cent guaranteed, death and taxes. Beyond  
20 that --

21 I think the attempt should be made. If  
22 they can only guarantee it for a short period of time,  
23 relatively short period of time but the goal should be  
24 100 per cent containment for the expectancy of the  
25 dangerous potential of this substance.







1 MR. VAN VLIET: Or as close to that as  
2 possible.

3 MR. SINCLAIR: As close to that as  
4 possible.

5 MR. VAN VLIET: Do you consider  
6 above-ground storage suitable in this category?

7 MR. SINCLAIR: I don't know. I'm not  
8 sure.

9 MR. VAN VLIET: Thank you.

10 THE CHAIRMAN: Further questions?

11 If not, thank you very much for taking  
12 the time to speak to us, sharing your views with us,  
13 Mr. Sinclair.

14 ---Mr. Sinclair withdraws

15 The next speaker on the list is Mr. Peter  
16 Prebble, MLA, from the Saskatchewan Legislature. I ask  
17 him to come forward.

18 Good morning.

19 PRESENTATION BY MR. PREBBLE:

20 Thank you very much for the opportunity to  
21 appear before you this morning.

22 I should just clarify that I'm presenting  
23 my views as an individual member representing my  
24 constituents but not on behalf of the New Democratic  
25 Party of which I'm an active member.





1 I'm not a supporter of expanding the  
2 uranium mining and nuclear power industries in Canada.  
3 And one of the many reasons for this is my concerns  
4 about the failure of the industry to date to be able to  
5 safely dispose of the nuclear waste that it creates.

6 I would like to comment on six key issues  
7 that I'm anxious that any environmental impact statement  
8 on nuclear waste disposal and management address in  
9 detail. And the first of these is the question of what  
10 is the future of nuclear power in Canada.

11 I think it's reasonable to expect that any  
12 environmental impact statement on nuclear waste disposal  
13 in Canada has to be founded on some basic assumptions  
14 about whether or not we are going to be expanding  
15 nuclear reactors in Canada, whether new ones are going  
16 to be constructed and how long the existing reactors in  
17 Canada will continue operating. This ought to be the  
18 subject of extensive public consultation and debate in  
19 Canada and it's my own personal view that the Federal  
20 Department of the Environment should be insisting on no  
21 further nuclear reactor construction in Canada until  
22 such time as there is a proven method of safely  
23 disposing of high level nuclear waste on a permanent  
24 basis.

25 The second key issue that I think an





1 environmental impact statement needs to address is the  
2 question not just of the well-being of the existing  
3 generation of Canadian residents, but the well-being of  
4 all future general generations of residents in Canada  
5 and in fact on the earth when coming forward with a  
6 proposal for nuclear waste disposal. And I've been  
7 conscious for a long time, and being in elected politics  
8 simply makes you more conscious of the fact that  
9 policy-making in Canada and certainly in our own  
10 province is largely done on the basis of short-term  
11 rather than long-term considerations.

12 So I worry that there will be significant  
13 pressure from both the nuclear industry and some  
14 politicians to adopt a nuclear waste disposal option  
15 that offers at least some security to current  
16 generations but offers considerably less security to  
17 future generations of Canadian residents.

18 The Federal Environmental Review Process  
19 must establish guidelines that vigorously guard against  
20 such pressures. I hope you will insist that the safety  
21 and well-being of residents of the earth for the next  
22 several thousand years must be a major test of any  
23 proposal for disposing of high level nuclear waste.

24 Third is the question of what hazards are  
25 posed by our current approach to temporarily storing







1 high level nuclear waste particularly in the event of  
2 war and how can these hazards be reduced while a  
3 solution to the nuclear waste disposal problem is being  
4 sought?

5 I've opposed the creation of more and more  
6 nuclear waste on this earth not only because of the  
7 burden it places on future generations yet unborn, whom  
8 I might add obtain very little benefit from our use of  
9 nuclear power, but because of the risks that it could  
10 pose to our existing civilization in the event of war.

11 I urge your Panel to closely examine the  
12 risks that could be associated with Canada's nuclear  
13 waste being stored on the surface and adjacent to  
14 existing nuclear reactors in Ontario, Quebec and New  
15 Brunswick in the event that Canada becomes engaged in a  
16 war in which Canadian cities are attacked.

17 The possibility of this is no longer  
18 remote with the very real possibility the Government of  
19 Canada will declare war on Iraq at some point in the  
20 future comes the possibility that Iraq will conduct that  
21 war not only in the Middle East but also over Canadian  
22 terrain. Let us hope that does not occur, but in the  
23 event that it does, what is there to prevent Iraq  
24 initiating some sort of strike on facilities that  
25 currently contain high level nuclear waste.





1                   The consequences of such a strike and the  
2 release of high levels of radiation into the environment  
3 near by major Canada cities would be absolutely  
4 devastating. Since Isreal was prepared to bomb an Iraqi  
5 reactor several years ago to prevent it from going into  
6 operation, an attack of some sort on a Canadian or  
7 American nuclear reactor and adjacent waste repository  
8 cannot be complete be ruled out of the question.

9                   I don't want to make it sound like this is  
10 a likely scenario, but I don't think it's one that we  
11 should entirely dismiss. I use this example to  
12 illustrate the fact that to date temporary nuclear waste  
13 disposal in Canada has been predicated on the assumption  
14 that Canada will never be at war. I hope that the  
15 Federal Department of Environment forces AECL to  
16 question that assumption in the preparation of its  
17 environmental impact assessment.

18                  I would like to see the Federal Department  
19 of the Environment, Provincial Emergency Measures  
20 Organizations, and AECL all examine whether it would be  
21 more desireable to temporarily store high level nuclear  
22 waste in an underground but readily retrievable location  
23 until such time as a permanent method for disposing of  
24 high level nuclear waste has been proven.

25                  The fourth point I want to make, and it







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1 ties into the third, is that the industry has proposed  
2 temporary storage underground on the assumption that the  
3 waste will be later reprocessed. I want to say that  
4 while I would favour some kind of temporary storage  
5 underground in favour of the existing plan of simply  
6 repositories above ground, I would strongly object to  
7 underground storage being tied into -- underground  
8 temporary storage being tied into reprocessing, and  
9 that's the fourth point that I make here, is that I  
10 think that as a key issue AECL and the environmental  
11 impact statement that they prepare needs to address the  
12 question of what assumptions are going to be made about  
13 plutonium reprocessing in Canada and whether or not  
14 nuclear reactor waste will be disposed of in the  
15 long-term or on a temporary basis.

16 I think that the industry has clearly, in  
17 the course of the last decade, at many times leaned  
18 towards temporary storage. I find this to be very  
19 troubling and I think one of the criteria should be that  
20 the waste should be permanently disposed of.

21 The assumption that any environmental  
22 impact statement on nuclear waste disposal makes about  
23 future reprocessing of plutonium from Canada's nuclear  
24 waste is exceptionally important.

25 I ask your Panel to insist that AECL be





1 directed to prepare an environmental impact statement  
2 that is predicated on the assumption that plutonium  
3 reprocessing will not be permitted in Canada and that  
4 any long-term disposal plans for high level nuclear  
5 waste in Canada must be planned on the assumption that  
6 disposal is permanent.

7                 Several years ago Atomic Energy of Canada  
8 actively planned for the construction of plutonium  
9 reprocessing facility in Canada as a way of extending  
10 the life of the Canadian nuclear industry. This would  
11 mean that Canada's high level nuclear waste who would be  
12 located in a relatively populated area near a  
13 transportation system and in a repository that would  
14 allow the waste to be easily retrieved for the purposes  
15 of removing the plutonium from the wastes.

16                I find such a proposal highly  
17 objectionable. Plutonium reprocessing involving  
18 processing weapons grade material for civilian energy  
19 use and raises very serious security and human rights  
20 issues. Reprocessing plants also have serious  
21 environmental problems.

22                I believe it's extremely important that  
23 this Panel require that AECL bring forward a plan for  
24 nuclear waste disposal that is of a permanent nature and  
25 does not tie Canada into a plutonium reprocessing







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1 economy as a way of reducing the hazards associated with  
2 high level nuclear waste disposal.

3 Two other key issues before I close. One  
4 is that AECL's proposal for nuclear waste should be  
5 evaluated on the basis of how isolated its disposal site  
6 is from existing communities. And on what plans it has  
7 for ensuring that the disposal site will remain  
8 geographically isolated in the centuries ahead.

9 To date, Atomic Energy of Canada Limited  
10 has consistently proposed locations for high level  
11 nuclear waste disposal that are close to existing  
12 communities.

13 I still well remember the first of these  
14 proposals in the late 1970s when AECL proposed Madoc,  
15 Ontario as a possible location for nuclear waste  
16 disposal, and I might add were overwhelmingly rejected by  
17 local residents. Since that time many other communities  
18 across Canada have made it clear that AECL's plans for a  
19 nuclear waste repository are not welcome in their area.

20 Given the risks and uncertainties  
21 associated with nuclear waste disposal, I believe local  
22 communities are right to reject the prospect of a  
23 disposal site in their area. It would be far more  
24 desirable if a suitable site was located in a  
25 geographically isolated part of Canada where long-term







1 monitoring of the waste could be conducted but where, in  
2 the event of an accident, there is no immediate danger  
3 to any community.

4 And sixth. The sixth issue of  
5 environmental impact statement should address is the  
6 time frame over which a permanent solution to the  
7 problem of nuclear waste is likely to be found.

8 In my own judgment, I think it is likely  
9 that we are many decades away from a proven solution to  
10 the nuclear waste disposal problem. The environmental  
11 impact statement needs to take account of that and of  
12 the process that will be required to obtain a permanent  
13 solution, if one exists.

14 A proven solution is likely only to be  
15 obtained after disposal is tested on a small scale over  
16 several decades and revisions to disposal strategies are  
17 adjusted throughout the course of what will, in effect,  
18 be a very carefully controlled experiment. This  
19 carefully controlled experiment over several decades  
20 should take place in a geographically isolated area that  
21 hopefully will prove suitable as a permanent disposal  
22 site for all of Canada's high level nuclear waste.

23 It may be in excess of a century before a  
24 truly safe disposal method is attained, but the site  
25 location for that work needs to get under way now





1 following full public consultation.

2 In conclusion, the environmental impact  
3 statement prepared by AECL should be required to address  
4 a set of criterion for disposing of nuclear waste that,  
5 first of all, assumes there will be no further  
6 construction of nuclear reactors in Canada in the next  
7 few decades; secondly, that focuses on protecting the  
8 safety of both current Canadian civilization and all  
9 future generations of people on this planet; third, that  
10 makes provision for a method of temporarily holding  
11 nuclear waste that safeguards it from attack or sabotage  
12 in the event of war; fourth, that it offers a long-term  
13 permanent method of nuclear waste disposal that is not  
14 predicated on adopting the hazardous technology of  
15 plutonium reprocessing; fifth, that offers a disposal  
16 site that is not only geographically stable and  
17 appropriate but is also geographically isolated and  
18 publicly acceptable; and sixth, that it's predicated on  
19 the prospect that a final solution to the problem of  
20 nuclear waste disposal may be several decades, perhaps a  
21 even a century or more away, and that in effect the work  
22 site chosen will be a carefully controlled experimental  
23 location where monitoring of nuclear waste will take  
24 place on a permanent basis with only small amounts being  
25 disposed of until a proven solution to waste disposal is







1 found.

2 Thank you very much.

3 THE CHAIRMAN: Thank you very much,  
4 Mr. Prebble. You stated your views very succinctly for  
5 us and I thank you for that.

6 Are there questions which Panel members  
7 would like to put to Mr. Prebble? Dr. Wilson.

8 DR. WILSON: Yes, I have two for  
9 clarification.

10 DR. PREBBLE: Yes.

11 DR. WILSON: I father from your Point No.  
12 6 then that you are favouring a central site, and I'm  
13 wondering if you have any comments about the  
14 transportation of the waste say from New Brunswick to  
15 wherever it's going to be? Do you have anything to say  
16 about transportation to that central site? You  
17 mentioned a disposal site for all of Canada's high level  
18 nuclear waste.

19 MR. PREBBLE: Yes. Whether I favour one  
20 site or two, I've not reached a conclusion on that. But  
21 clearly transportation is going to be a concern  
22 regardless of where the site is located because at the  
23 present time the reactors are located in relatively  
24 populated areas, and if I'm proposing a relatively  
25 remote disposal site, implicitly that involves some





1 transportation. And I don't have any specific comments  
2 on the question of transporting the wastes other than  
3 the fact that obviously a great deal of caution should  
4 associate it, and I'm not an expert in the question of  
5 transport of nuclear waste.

6 I look on with a great deal of concern  
7 about the way I see waste being transported around in  
8 Europe relative to the use of the plutonium economy  
9 there. I think when we transport our waste I would like  
10 to think that it's only going to be done once, that it's  
11 going to be to this site, that they are not going to  
12 have to leave the site again provided the site works  
13 out, and I think that's the best way of making sure that  
14 we don't have to worry about the transport of nuclear  
15 waste level on a long-term basis frequently.

16 We should obviously seek transportation  
17 routes that, to the extent possible, avoid moving  
18 through major cities, but I'm sure all those things  
19 would be taken account of by the Government of Canada.

20 The transport of the waste given the fact  
21 that it's being done in other parts of the world is  
22 actually one of the things that, as long as it's not  
23 being done more than the once from a particular site,  
24 gives me less concern than the disposal plan itself.

25 DR. WILSON: And the second question. You







1 mention your preference for disposing of it in a  
2 relatively remote isolated part of the country and you  
3 also cite the citizens of Madoc who made it clear it was  
4 not welcome in their area.

5 I'm wondering if you have any comments on  
6 the ethics of disposing of it in a relatively isolated  
7 site where there still are people but who may not have  
8 the political clout to reject it.

9 MR. PREBBLE: Well, that poses the larger  
10 question about the ethics of nuclear power to begin  
11 with, doesn't it? I mean, that's the whole nature of  
12 the whole nuclear fuel cycle, has been one of imposing  
13 upon people who have less political clout, and it begins  
14 with uranium mining. If I could just be allowed to  
15 develop this for a moment because I want to come right  
16 back to the topic in a second.

17 In my judgment this has been the problem  
18 with the whole nuclear fuel cycle, the radioactive --  
19 the problems of radioactive pollution and uranium  
20 tailings, and all of these sorts of problems in this  
21 province have been imposed upon the people of northern  
22 Saskatchewan who, again, have the least political clout.

23 Given the fact that we now have these  
24 wastes built up and that we have to dispose of them, I  
25 think that we are going to be forced to choose an







1 isolated area not because it's acceptable but because  
2 it's more acceptable than putting them in a populated  
3 area, and I don't consider it ethically acceptable to  
4 place these wastes in a remote area where people live  
5 and don't really have the political power to fight it.

6 I just consider it to be more acceptable  
7 than placing them in a populated area, which is to date  
8 largely what AECL has attempted to do.

9 The other thing that I think is important  
10 about this is that to date my perception has been that  
11 proposals have come forward for waste disposal that have  
12 in some way been connected to providing jobs to a local  
13 community. I also consider that to be ethically  
14 unacceptable in the sense that we shouldn't be  
15 attempting to bribe communities to accept nuclear waste  
16 because of their economic plight.

17 So my hope is that we will be able to  
18 find a location that isn't adjacent to any existing  
19 community.

20 Now, the prospect of there being future  
21 communities there of course is one of great concern and  
22 how we set about warning future generations that this is  
23 a waste disposal site is something that gives me great  
24 concern and that, given our record in the past, I worry  
25 a great deal about whether people a thousand years from





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1 now will actually know about the location that we've  
2 chosen. But we need to set about thinking about methods  
3 by which, first of all, that area that we choose will  
4 remain isolated and, secondly, whereby we will have  
5 mechanisms in addition to our current means of  
6 communication of warning future generations that this is  
7 a waste disposal site.

8 DR. WILSON: Thanks.

9 THE CHAIRMAN: Other questions?

10 Dr. van Vliet.

11 MR. VAN VLIET: Mr. Prebble, you indicate  
12 in page 3 of your presentation that we should take a  
13 long-term view rather than the short-term and that from  
14 your own experience as a politician the policy-making or  
15 political decisions are tied to electoral cycles which  
16 shorten as time goes on; at the same time we find  
17 industry more looking at more quarterly results rather  
18 than yearly or a longer period of time.

19 What kind of institution in your opinion  
20 would guarantee not only a long-term look but an  
21 implementation of a long-term plan? What is there in  
22 society that would guarantee that kind of an approach  
23 with some reasonable degree of stability?

24 MR. PREBBLE: I'm not sure I can answer  
25 that question. That, again, is one of the reasons why I







1 have ethical problems with the nuclear industry, is that  
2 because I think it's predicated on having such  
3 institutions and as a human civilization to date has had  
4 a great deal of problem creating them, hasn't it?

5 That doesn't mean of course -- we've got  
6 to attempt to do this now given the fact that we now  
7 waste to dispose of. Whichever side of the issue you  
8 are on, you can't ignore the question of waste disposal.

9 And my feeling I guess about the process  
10 is that, first of all, if we are going to have a  
11 long-term look that developing a process that provides  
12 ongoing opportunities for public input and public  
13 consultation is key. This is not just the problem that  
14 we can leave to the scientific community even once we  
15 have a waste disposal plan that the public has said they  
16 accept and agree on.

17 So I think there has to be provisions for  
18 ongoing public input into whatever institution it is  
19 that we create to monitor these wastes. I think that  
20 institution has to be accountable to Parliament and that  
21 there has to be mechanisms for Parliamentarians and the  
22 province in which the waste site is located and to have  
23 opportunities on an annual basis for accountability. So  
24 this is probably a body that should report to the  
25 Parliament of Canada on an annual basis and that can be





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1 called before the Parliament of Canada and where there  
2 are, in addition to being called before the Parliament  
3 of Canada, where there are also other opportunities for  
4 the public to have input, because calling an  
5 institutional body that we might set up to manage these  
6 wastes before Parliament gives Parliamentarians an  
7 opportunity to scrutinize it, but it doesn't necessarily  
8 give the public at large an opportunity to scrutinize  
9 it.

10 And you can see that in the existing crown  
11 corporations. The existing crown corporations appeared  
12 before the Government of Canada for respective  
13 provincial legislatures but they don't hold annual  
14 meetings, for instance, in the community whereby they  
15 are held to account. I'm not suggesting an annual  
16 meeting scenario necessarily, but I think there needs to  
17 be some mechanism by which the public can hold the  
18 decision-makers who manage this facility to account, and  
19 right now that doesn't exist in terms of nuclear  
20 industry in Canada.

21 I would like to see such a mechanism being  
22 established with respect to the ongoing operations of  
23 whatever site we eventually choose.

24 Because it will be in an isolated area, I  
25 hope, there is a tendency, out of site out of mind, and





1 I think we need to establish mechanisms to ensure that  
2 that doesn't happen.

3 MR. VAN VLIET: When you mention such an  
4 institution reporting to Parliament, you mean directly  
5 to Parliament or through a minister, as is more often  
6 the case?

7 MR. PREBBLE: I would actually prefer it  
8 to be directly to Parliament. To use some provincial  
9 analogies which I'm more familiar with that I think are  
10 applicable at the federal level, I believe federal  
11 auditor responds directly at Parliament rather than  
12 through a minister. Certainly our provincial auditor  
13 does. It seems to me that's the more appropriate way.  
14 The Ombudsmen provincially generally tend to report  
15 again directly to the legislature, so that the  
16 accountability is first to all elected members rather  
17 than through a particular minister.

18 MR. VAN VLIET: You also indicated that  
19 this might be both to the Federal Parliament and to the  
20 legislature of the province. Is there not a conflict  
21 problem between reporting to two bosses, if you like,  
22 two different structures, maybe two different  
23 political --

24 MR. PREBBLE: Yes, there is. Surely we  
25 ought to be able to get around that if we accept the







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1 basic principle that there is going to be some overlap  
2 in jurisdiction here, albeit the principle jurisdiction  
3 will be federal.

4 Uranium mines right now, if I could use  
5 another example, in effect report to two levels of  
6 government, and in Saskatchewan we've facilitated that  
7 process by establishing a lease agreement between each  
8 of the uranium mining companies and the province with  
9 respect to concerns that the province has regarding  
10 environmental protection, occupational health and  
11 safety. So that if there is -- while it was unclear as  
12 to whether the Government of Saskatchewan had  
13 jurisdiction in the areas of occupational health and  
14 safety and the environment, although we always argued  
15 that we did, but I agree it was debatable point legally,  
16 so therefore we sought clarification of that and  
17 obtained basically the right to regulate in those areas  
18 through the establishment of a lease agreement, which is  
19 in effect a contractual agreement between the mining  
20 company and the province accepting the fact that we have  
21 regulatory jurisdiction in these areas.

22 I'm not suggesting that as the model, I  
23 just use to it make the point that I think it is  
24 possible to find models whereby both the province that  
25 the waste disposal facility is in and the federal





1 government can both in effect regulate.

2 Now, it may well be that there are some  
3 conflicts, but if there are there are conflicts that  
4 will then need to get worked out, and in effect the most  
5 stringent rules in a particular area will end up  
6 applying. If the province wants to apply more stringent  
7 standards than the Government of Canada it will have the  
8 authority to do so. And a mechanism needs to get worked  
9 out to allow that to happen.

10 And I think this is in the public  
11 interest. If you've got two -- in effect two levels of  
12 government safeguarding a nuclear waste disposal site  
13 and the most stringent regulations in a particular area  
14 are the ones that have to apply to that site, I think  
15 that is good for the public. It offers an additional  
16 level of public security.

17 If the site is in Ontario, which is  
18 certainly a possibility, I mean I think the residents of  
19 Ontario ought to have, through their elected members and  
20 through the mechanisms that I mentioned earlier for  
21 public consultation and input, need to have a say in how  
22 that waste disposal site is operated in addition to any  
23 regulations that might be introduced by the Government  
24 of Canada, because after all, they are the ones that are  
25 the most immediately affected if there is an accident at







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1 the site or of water should, at some point in the  
2 future, carry nuclear waste to the surface near the  
3 site.

4 MR. VAN VLIET: If, on the circumstances,  
5 you feel those are well-designed safeguards for the  
6 public, if under such circumstances the best site from  
7 all aspects would be in a remote location in  
8 Saskatchewan, in the best interest of Canadians would  
9 you accept that as a possible solution than in Ontario?

10 MR. PREBBLE: Well, one of the questions I  
11 think is that it seems to me that the provinces that opt  
12 for nuclear power are the ones that carry the heaviest  
13 burden with respect to an obligation to accept a nuclear  
14 waste disposal site.

15 If Saskatchewan was to have a nuclear  
16 reactor, I would feel from an ethical stance that as  
17 much as I would oppose that nuclear reactor that we are  
18 then in the running for a nuclear waste disposal site  
19 along with the provinces of Ontario, Quebec and New  
20 Brunswick.

21 I will do everything I can to oppose a  
22 nuclear reactor being built in this province, and one of  
23 the reasons I'll do that is because I don't want this  
24 province to be a site for high level nuclear waste  
25 disposal. But if a reactor is built and we are





1 operating one, we then have an obligation I think to be  
2 on the site selection list and if we are the best  
3 location we are going to have to come to grips with the  
4 ethical responsibilities for, you know, disposing of the  
5 waste that we have helped to create.

6 MR. VAN VLIET: I might suggest that it's  
7 probably highly unlikely that 5,000 or 10,000 years from  
8 now, which might be the length of time that such a  
9 facility needs to be safeguarded or in place, that the  
10 political institutions, as they are currently  
11 constituted in artificial boundaries called  
12 Saskatchewan, Manitoba --

13 MR. PREBBLE: I agree.

14 MR. VAN VLIET: You know, we may be part  
15 of a different kind of Canada and there's certainly  
16 indicators today politically that that might happen  
17 sooner rather than later.

18 MR. PREBBLE: Absolutely.

19 MR. VAN VLIET: Erasing those artificial  
20 lines on the map, where do you stand? You no longer  
21 have Saskatchewan, you have another designation of  
22 Canada. Could you still maintain sort of a  
23 provincialistic, nationalistic outlook that says 'This  
24 is my territory'?

25 MR. PREBBLE: Well, I've got a







1 responsibility to the people that I represent to -- I  
2 mean, first of all, to speak out on these issues, and  
3 certainly I have a number of constituents who have a  
4 great deal of interest in this and one of the things  
5 that my constituents have been concerned about lately,  
6 which is only tangential to this but I use to it make  
7 the point, is that they have been vigorously opposing  
8 not only proposals for a reactor in the province but  
9 also for a small reactor, a 10-megawatt reactor on the  
10 University of Saskatchewan campus, and this happens to  
11 be in the middle of my riding if it was constructed.

12 And I've received a petition signed by  
13 about 900 of my own constituents and about 7,000 people  
14 in the City generally, you know, urging that this not be  
15 built, and one of their concerns is that they don't want  
16 to see a facility constructed in Saskatchewan that will  
17 contribute to the problem of nuclear waste in Canada.

18 So given that, I think the initial  
19 reaction of my constituents is that if they are not  
20 helping to produce nuclear power they just as soon not  
21 take responsibility for disposing of the wastes.

22 But let me look at it from the larger  
23 plain for a moment. We are mining uranium in this  
24 province and by mining uranium we are creating, we are  
25 in effect contributing to the nuclear waste problem as







1 well. So I think really looking at it from that larger  
2 standpoint, I don't think Saskatchewan can be ruled out  
3 as a site for nuclear waste disposal because after all,  
4 we are contributing very significantly to the creation  
5 of these wastes in the first place.

6 MR. VAN VLIET: Thank you very much.

7 THE CHAIRMAN: Dr. LaPierre.

8 DR. LAPIERRE: Mr. Prebble, I have one  
9 question regarding your geological isolation in remote  
10 areas or isolated areas for centuries ahead. I see a  
11 problem with that --

12 MR. PREBBLE: I do too.

13 DR. LAPIERRE: I think about the  
14 structures we have now. We have military bases in place  
15 or military terrains where no one is allowed to go, we  
16 keep people away from them. But if future generations  
17 are going to need minerals or some other elements of  
18 nature to survive, and if we -- these elements might be  
19 in an area that you dictate as a waste disposal site,  
20 how might they be compensated for not using these  
21 elements, true waste produced, as you indicated, for  
22 something they had no use, they did not get the use of  
23 the electricity that was produced from the waste.

24 So I'm looking at: How can you ever  
25 compensate or contemplate isolating these areas through





1 time without compensation or how do you compensate?

2 MR. PREBBLE: Well, again, with a great  
3 deal of difficulty. This is what makes it both a very  
4 challenging and ethically troubling issue.

5 All of the questions that you've asked  
6 bring me back to one of the original points that I made  
7 in my document, and that is -- and if you don't mind and  
8 give me the latitude to go back to the -- I'm sorry,  
9 sir, I didn't catch your name. But the previous  
10 question for a moment.

11 I could only in conscious seriously  
12 discuss with my constituents the notion of a remote part  
13 of Saskatchewan becoming a site for nuclear waste  
14 disposal in Canada if there was a moratorium on nuclear  
15 power plant construction in Canada. I mean, one of the  
16 things that I couldn't ethically propose to my  
17 constituents is that we are going to continue producing  
18 more and more nuclear waste and use this disposal site  
19 to house it.

20 I mean, if that's going to be the scenario  
21 then my answer would be no. If we were looking at a  
22 moratorium on nuclear power in Canada, that we decided  
23 we are not going to create any more of this waste until  
24 we really know how to deal with it in a proven way, then  
25 I think the notion of, you know, the safest place in







1 Canada to put it that's geographically isolated,  
2 geographically stable, with the kind of plan that I  
3 proposed here, I think needs to be looked at seriously,  
4 and that would have to include the Province of  
5 Saskatchewan.

6 I think there's an important difference.  
7 If the provinces of Ontario and Quebec and New Brunswick  
8 decide that they want to build more reactors and they  
9 want us to dispose of the wastes, then my response would  
10 be no. I think that's the first thing.

11 Also, if we are looking a plutonium  
12 reprocessing in Canada then I would say absolutely no to  
13 any notion of Saskatchewan or any province that isn't  
14 producing the nuclear -- that isn't producing nuclear  
15 power being a disposal site. If we are looking at this  
16 as a permanent, final way of disposing of nuclear waste  
17 in a central site that's going to be very closely  
18 monitored with full public input, then I think any  
19 province has to be potentially considered for a site.

20 Having said that, with respect to how you  
21 ensure that these areas remain remote and isolated, of  
22 course we are going to have great difficulty doing that.

23 So I think we make the decision about  
24 locating it in a remote area, No. 1, with some view to  
25 the concerns of existing generations. When I look at





1 the greenhouse effect, for instance, and the  
2 implications that that could have for people moving into  
3 the northern part of the North American continent, just  
4 that one notion and the prospect of movement within a  
5 matter of the next five or six decades, just shows how  
6 hollow the notion of being able to contemplate keeping  
7 the site isolated for centuries and centuries into the  
8 future, in effect thousands of years in the future, is  
9 going to be very tough to do, which is why I think that  
10 we, in effect, need to try to work out ways of passing  
11 onto future generations warning signals about the fact  
12 that this site should not be occupied by residents and  
13 we need to publicly discuss creative ways of doing that.

14 So far we haven't even been able to  
15 prevent communities locating on landfills that were --  
16 that were placed there only 20 or 30 years before the  
17 community located there. So we've got a big task ahead,  
18 but I really do think that we have to struggle with --  
19 at least make a genuine effort to try to warn future  
20 generations that they should not locate their homes and  
21 their communities on or immediately adjacent to this  
22 site.

23 THE CHAIRMAN: Mr. Prebble, you have  
24 raised the question of the physical security of the  
25 existing storage, and I imagine what you were thinking





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1 of their against military type or terrorist type attack,  
2 even though you say that is not a strong possiblililtiy,  
3 it is one taken into account. I think that is the first  
4 time, as far as I can remember, that has been explicitly  
5 raised in our rounds so far.

6 A number of people who have expressed to  
7 us concern as to whether there is yet sufficient  
8 knowledge to choose a permanent disposal site, the state  
9 of our knowledge is still inadequate, had said "Just for  
10 the moment leave it where it is because we think it is  
11 being pretty well monitored and looked after on those  
12 sites. "

13 I wonder if you have any comment on that  
14 aspect. Leave aside for the moment your other concern,  
15 this small percentage risk, one hopes, of an attack of  
16 some sort. Do you have any thoughts on how well the  
17 waste is being looked after in its present temporary  
18 storage sites?

19 MR. PREBBLE: Well, I'm not an expert on  
20 that. I don't pretend to be an expert by the way on any  
21 particular area of the nuclear issue at all. I've been  
22 extensively involved in it as a member of the public and  
23 a member of the environmental groups and an elected  
24 politician for about 15 years now. But I certainly am  
25 not an expert on how the wastes are being handled in







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1 these repositories, but I have consulted with a number  
2 of people whom I think do have expertise on the question  
3 of the security of these facilities in the event of war,  
4 and I'm of the view that there is reason to be concerned  
5 about the security of these facilities.

6 There's even reason to be concerned about  
7 them in peace time, but I consider those risks to be  
8 much more remote. I mean, they basically involve the  
9 very unlikely event of sabotage. I think that that's  
10 only remotely possible, but I do think the whole nuclear  
11 industry, not just in Canada but right around the world,  
12 is predicated on -- I look at the Europeans, I think  
13 they made precisely the same faulty assumption, that  
14 these facilities are all based on the notion that there  
15 won't be a war.

16 Assuming that there won't a nuclear war  
17 for a moment, which is also another faulty assumption, I  
18 think. I mean, if a nuclear missile was to hit one of  
19 these facilities it would be -- I mean, I can't even  
20 begin to imagine the death and the horror. But you  
21 don't to have go that far. All you have to look at the  
22 notion of attack using a conventional weapon striking  
23 the facility, and again you are talking about basically  
24 the same kind of impact as the explosion of a nuclear  
25 bomb with the release of these materials. I don't know





1 over precisely what distance, but certainly very  
2 significant distances.

3 Even assuming no direct attack, I think  
4 that -- I'm not at all sure, for instance, in the case  
5 of Iraq that their military hardware is likely to get  
6 through Norad airspace, but there are certainly other  
7 ways of sabotaging the reactor and creating a great deal  
8 of damage and possibly releasing nuclear waste into the  
9 environment. And when any country is at war and is  
10 involved in basically bombing the hell out of the cities  
11 of another country, as Canada and United States may soon  
12 be doing from the case of Iraq cities, I don't think one  
13 of logically contemplate what the opposition might  
14 choose to do. And we may very well be in that prospect,  
15 U.N. resolution or no U.N. resolution right now.

16 I'm only speculating here with respect to  
17 Iraq. I don't want to point to Iraq too heavily. The  
18 larger point I guess I'm trying to make is that I think  
19 we built these facilities predicated on the notion that  
20 we'll always be in peace time. I believe that that's  
21 not a reasonable assumption to make, as much as I want  
22 to struggle to ensure that that will be the case, and  
23 I'm sure everybody else in the room wants to do the  
24 same. But there is no assurance of that being the case.

25 Therefore, I think that within the course







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1 of the next 10 years we need to come to grips with a way  
2 of better safeguarding these wastes until we have a  
3 proven method of disposing of them, and I think that  
4 leaving them on the surface beside the reactors is not  
5 enough of a safeguard, personally.

6 THE CHAIRMAN: Thank you.

7 Other questions for Mr. Prebble?

8 Well, thank you very much for coming this  
9 morning not only for your original presentation but for  
10 your responses to our questions as well.

11 MR. PREBBLE: Good luck in your work.

12 THE CHAIRMAN: Thank you.

13 ---Mr. Prebble withdraws

14 THE CHAIRMAN: I have no further names  
15 registered, but if there are others who would like to  
16 speak to us this morning please feel free to come  
17 forward. And if that is not the case then, I would like  
18 to thank all of those who have been present for last  
19 night's session and today's, and particularly those who  
20 have taken the trouble to present their views to us.  
21 This is extremely helpful to us as we try to wrestle  
22 with what we all recognize is a very difficult problem  
23 indeed.

24 Thank you very much indeed.

25 ---Whereupon at 10:14 a.m. the hearing was concluded





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I hereby certify that the foregoing is a true and accurate computerized transcription of the proceedings to the best of my ability and skill.

SANDRA M. NAZAREC, C.S.R





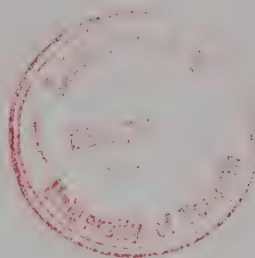




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BUREAU FEDERAL  
D'EXAMEN DES EVALUATIONS  
ENVIRONNEMENTALES



Held at/Auditions tenues au:  
Delta Winnipeg  
Winnipeg, Manitoba

Date: Wednesday, November 22, 1990  
Mercredi le 22 novembre, 1990

Volume: 18  
(Day & Evening Sessions)

B E F O R E / D E V A N T :

MR. BLAIR SEABORN	Chairman
DR. LOIS WILSON	Member
DR. LIONEL REESE	Member
MR. PIETER van VLIET	Member
MS. LOUISE ROY	Member

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ON NUCLEAR FUEL WASTE  
MANAGEMENT

FEDERAL D'EXAMEN  
DES EVALUATIONS  
ENVIRONNEMENTALES  
DE LA GESTION DES DECHETS  
DE COMBUSTIBLES NUCLEAIRES

SCOPING MEETING  
REUNIONS DE DETERMINATION DE L'IMPORTANCE DES PROBLEMES

Hearing held at the Delta Winnipeg,  
Winnipeg, Manitoba, on Wednesday,  
November 22, 1990, at 2:00 p.m.

VOLUME 18

B E F O R E :

MR. BLAIR SEABORN

Chairman

DR. LOIS WILSON

Member

DR. LIONEL REESE

Member

MR. PIETER VAN VLIET

Member

MS. LOUISE ROY

Member







(i)

A P P E A R A N C E S

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DR. RAYMOND PRICE	SCIENTIFIC REVIEW GROUP
CHIEF CHARLES FOX	NISHNAWBE ASK-NATION
MR. GEORGE YLONEN	PRIVATE CITIZEN
MR. BRYAN JOHNSON	PRIVATE CITIZEN
DR. CARL RIDD	PRIVATE CITIZEN
MR. BUDDY BROWNSTONE	THE WINNIPEG CHAMBER OF
MR. ALAN CANTOR	COMMERCE
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MR. KENNETH EMBERLEY	PRIVATE CITIZEN
MR. DAVE TAYLOR	CONCERNED CITIZENS OF
	MANITOBA
DR. JOVAN JOVANOVIICH	UNIVERSITY OF MANITOBA
MR. EGON M.A. STANIK	PRIVATE CITIZEN
MS. ANNE LINDSEY	NATIONAL ACTION
	COMMITTEE ON THE STATUS
	OF WOMEN
DR. JANET SILMAN	EVANGELISM AND SOCIAL
	ACTION COUNCIL OF THE
	UNITED CHURCH
	CONFERENCE OF MANITOBA
	AND NORTHWESTERN
	ONTARIO
MS. CYDNEY TROTT	PRIVATE CITIZEN





(ii)

I N D E X o f P R O C E E D I N G S

<u>Presentation by:</u>	<u>Page No.</u>
DR. RAYMOND PRICE	8
CHIEF CHARLES FOX	30
MR. GEORGE YLONEN	50
MR. BRYAN JOHNSON	57
DR. CARL RIDD	61
MR. BUDDY BROWNSTONE	77
MR. ALAN CANTOR	78
CHIEF CATHY SKY	85
for MR. H.C.R. GAVIN	101
MR. KENNETH EMBERLEY	102
MR. DAVE TAYLOR	108
DR. JOVAN JOVANOVIĆ	122
MR. EGON M.A. STANIK	134
MS. ANNE LINDSEY	143
DR. JANET SILMAN	166
Questions by MS. CYDNEY TROTT	185





1 ---Upon commencing at 2:00 p.m.

2 THE CHAIRMAN: Good afternoon, ladies and  
3 gentlemen, and welcome to this Scoping Meeting which is  
4 being held by the Environmental Assessment Panel,  
5 charged with a review of the nuclear fuel waste  
6 management and disposal concept. This panel was  
7 appointed by the Minister of the Environment in October  
8 of 1989.

9 Could I introduce to you, please, the members  
10 of the panel who are with me today at this table. At  
11 the far end of the table, to my left, your right, we  
12 have Mr. Pieter Van Vliet from Regina, a mechanical  
13 engineer, who is a member of the Senate of the  
14 University of Regina.

15 Next to him, Dr. Lois Wilson, I say of  
16 Toronto, but I think she could also say of Winnipeg, who  
17 is President of the World Council of Churches and  
18 Co-Director of the Ecumenical Forum of Canada.

19 To my immediate left, Dr. Louis LaPierre,  
20 from Moncton, a professor in the Department of Biology  
21 at the University of Moncton and Chairman of the  
22 Environmental Council of New Brunswick.

23 To my immediate right, Ms. Loiuse Roy, an  
24 environmental and public affairs consultant from  
25 Montreal. She is a former Vice-President of the Quebec







1 Public Hearing Board on the Environment and is currently  
2 a member of the Canadian Environmental Assessment  
3 Research Council.

4 And to Madam Roy's right again, Dr. Lionel  
5 Reese from London, Ontario, a physician at St. Joseph's  
6 Hospital in that city, a professor in the Department of  
7 Diagnostic Radiology and Nuclear Medicine at the  
8 University of Western Ontario.

9 My name is Blair Seaborn. I'm Chairman of  
10 the panel. I live in Ottawa. I'm retired, but I served  
11 previously as Deputy Minister of the Environment and  
12 Canadian Chairman of the International Joint Commission.

13 Could I also introduce the members of Panel's  
14 Secretariat with me today, Mr. Bob Greyell at the table  
15 over to my left, who is Executive Secretary. At the  
16 back of the hall Ms. Susan Toller, an environmental  
17 analyst and Ms. Susan Flanagan. Both of them are on the  
18 staff of the Secretariat and are here to help you in any  
19 way they can in the course of the proceedings of this  
20 afternoon and this evening.

21 This review is being conducted in accordance  
22 with the Federal Environmental Assessment and Review  
23 Process, FEARP. This process ensures that the  
24 environmental implications of proposals for which the  
25 federal government has decision making authority are





1 fully considered as early in the planning process as  
2 possible, and before irrevocable decisions are taken.

3 I hope that some of you may have had the  
4 opportunity to receive information on this review  
5 process and on the proposal of Atomic Energy of Canada  
6 Ltd., AECL, at the open houses held in May and June of  
7 this year.

8 The panel has been asked, in part, to examine  
9 the nuclear fuel waste management and disposal concept,  
10 a proposal for permanent disposal of used nuclear fuel  
11 deep in the granitic rock of the Canadian Shield, which  
12 has been put forward by AECL.

13 This proposal would see the used fuel sealed  
14 inside corrosion resistant containers and placed in  
15 holes drilled in the floor of a room inside a disposal  
16 vault. The vault would in some ways resemble a deep  
17 mine and would contain the used fuel in an area of  
18 approximately four square kilometres.

19 I'd like to say a few words about the Panel's  
20 mandate. The terms of reference state that the Panel is  
21 to review the safety and acceptability of the concept  
22 for geological disposal of nuclear fuel wastes in  
23 Canada. In addition, however, to the AECL proposal  
24 which I described a moment ago, we shall examine a broad  
25 range of nuclear fuel waste management issues including







1 long-term management, transport and environmental,  
2 social and economic effects. We shall look at  
3 approaches to nuclear fuel waste management and disposal  
4 being developed elsewhere in the world.

5 Since site selection will not occur until a  
6 disposal concept has been accepted as safe, the Panel  
7 will not consider any specific sites, but will review  
8 the potential availability of sites and the methodology  
9 and criteria required for their selection.

10 I'd also like to say a few words about what  
11 is not in the Panel's mandate and will not be addressed  
12 in this review. The energy policies of Canada and the  
13 provinces. The role of nuclear energy within these  
14 policies, including the construction, operation, and  
15 safety of new or existing nuclear power plants. Fuel  
16 reprocessing as an energy policy and military  
17 applications of nuclear technology.

18 I want to make it clear, however, that the  
19 members of the Panel are very much aware of the broader  
20 concerns related to the use of nuclear materials and the  
21 use of nuclear power for the generation of electricity.

22 The Panel has been urging a broader review of  
23 the comparative environmental implications of the  
24 various methods of generating electricity. I am pleased  
25 to say that steps have now been taken to get such a





1 review underway. The Federal Department of Energy,  
2 Mines and Resources has written to provincial  
3 counterparts, both in energy and environmental  
4 departments, and to a number of energy and environment  
5 interest groups seeking their reaction to proposed terms  
6 of reference for such a study. My hope is, that this  
7 will be -- that agreement will be reached in the near  
8 future on such terms of reference, and a study will get  
9 underway before too long.

10 The purpose of these scoping meetings is to  
11 allow participants to identify issues that need to be  
12 addressed in the environmental impact statement that  
13 will be prepared by AECL. The Panel is not requesting  
14 the presentation of opinions on the substance of the  
15 disposal concept at this time. Public hearings will be  
16 held later to discuss whether AECL's proposal is  
17 acceptable. Scoping meetings enable participants to  
18 assist the Panel in identifying issues that are of  
19 concern and questions which need answers.

20 Following this series of meetings the Panel  
21 will prepare draft guidelines for the preparation of the  
22 environmental impact statement. We will invite public  
23 comments on these draft guidelines over a period of at  
24 least 30 days. After consideration of these comments  
25 the Panel will finalize the guidelines and issue them to







1 AECL. AECL will then proceed to prepare its  
2 environmental impact statement, a process which may well  
3 take a year, a year and half or even more, depending  
4 upon the detail which is required to be covered. Once,  
5 however, it has completed its impact statement and  
6 submitted it to the Panel, that document will be made  
7 available for at least a 90 day public review.

8 To assist in the evaluation of scientific and  
9 technical matters, a scientific review group of  
10 distinguished independent experts has been established  
11 by the Panel to examine the safety and scientific  
12 acceptability of AECL's disposal concept. A report of  
13 their findings and recommendations will be submitted to  
14 the Panel who will distribute it to the public.

15 Once the Panel is satisfied that AECL has  
16 addressed satisfactorily all the items identified in the  
17 guidelines we will hold our public hearings.

18 Participants will be asked to discuss the acceptability  
19 of AECL's disposal concept in detail at this stage of  
20 the review. The Panel will consider all comments  
21 submitted to it and will prepare its report to the  
22 Ministers of Environment and of Energy, Mines and  
23 Resources.

24 The present scoping meetings will be  
25 conducted according to the meeting procedures published







1 on August the 24th of this year. The Panel would  
2 appreciate it if review participants would restrict  
3 themselves to the identification of issues within the  
4 Panel's mandate. I ask that those registered to speak,  
5 and I'm delighted to see that we have not only a large  
6 turnout of people to participate to being present this  
7 afternoon, but a number of people who wish to  
8 participate by addressing us, but I would ask those who  
9 have been registered to try to summarize their concerns  
10 in 15 minutes, unless they have made a previous request  
11 for an additional 10.

12 The Panel will pay equal attention to written  
13 and oral statements. Participants who registered in  
14 advance will be asked to present their views to the  
15 Panel and after their presentation I will ask the  
16 members of the Panel if they have any questions of  
17 clarification which should be addressed arising out of  
18 the initial presentation.

19 If you would like to make a presentation to  
20 the Panel but have not yet registered, please speak to  
21 one of the members of the Panel's secretariat, and  
22 within the limits of the time available, and, of course,  
23 respecting those who have asked in advance, we will try  
24 to accommodate everyone who wishes to speak to us.

25 Court reporters are present to report the





1 proceedings of each meeting and transcripts will be made  
2 available to designated libraries. A compilation of  
3 written submissions will also be available from the  
4 Federal Environmental Assessment Review Office in  
5 Ottawa. The Panel will accept, in addition to these  
6 oral presentations, written submissions identifying  
7 issues and concerns any time up till the end of this  
8 month, up to and including November 30th, 1990.

9 With this, by way of introduction, I would  
10 like to call upon our first participant for this  
11 afternoon's session, Dr. Raymond Price, who will be  
12 reporting on behalf of the Scientific Review Group which  
13 I have just mentioned. Dr. Price.

14 PRESENTATION BY DR. PRICE:

15 Thank you, Mr. Chairman.

16 The Scientific Review Group has been studying  
17 and discussing the proposal for about six months now.  
18 This process culminated with a visit to the Whiteshell  
19 Nuclear Research Establishment and the Underground  
20 Research Laboratory earlier this week.

21 During that visit we had the opportunity to  
22 examine the research procedures and some of the results  
23 and to discuss them with the AECL staff. We worked on a  
24 revision of our report yesterday and a draft copy is  
25 available today. The final copy will be available







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1     shortly. I will try to present the highlights of our  
2     report today.

3             Our objective has been to help identify those  
4     scientific and technical questions and concerns that  
5     should be addressed in the environmental impact  
6     statement. Let me begin with a summary statement. The  
7     environmental impact statement should contain a detailed  
8     description and evaluation of the disposal concept.  
9     This should include the assumptions on which the concept  
10    and its evaluation have been based and the limits of the  
11    validity of the results that were obtained.

12            Gaps in available knowledge should be clearly  
13    identified and the limitations that these gaps impose on  
14    the environmental impact statement should be discussed.  
15    Charts and diagrams should be used extensively  
16    throughout the statement to facilitate the explanation  
17    of complex procedures and processes and the presentation  
18    of results. Detailed scientific and technical  
19    information, required primarily by specialist reviewers,  
20    should be referenced and appended. An overview of the  
21    statement that can be understood by the general public  
22    should be prepared for wide distribution and should  
23    consolidate the most important findings. This overview  
24    should allow a reader both to obtain a concise idea of  
25    the contents of the statement and to focus on items of





1 specific interest. Aspects of the proposal that might  
2 stimulate public concern should be described with  
3 particular clarity. The use of Charts and diagrams in  
4 the overview section is strongly encouraged.

5 Because of the widespread interest in the  
6 deep geological disposal of high-level nuclear wastes,  
7 the vast scope of this concept and the broad range and  
8 complexity of the issues involved, the statement, and in  
9 particular the overview, is expected to be widely  
10 circulated and read. Therefore, it is of the utmost  
11 importance that the overview be carefully prepared and  
12 readily understood.

13 Terms such as environment, disposal, waste,  
14 scenario, radiation dose and others that are used in a  
15 technical sense must be defined unambiguously.

16 The environmental impact statement should  
17 discuss why high level nuclear waste is a problem that  
18 needs to be addressed now. This discussion should  
19 include the characteristics of the waste and the risks  
20 to humans and the natural environment that make a safe  
21 disposal system necessary.

22 The description of the characteristics of the  
23 waste that are critical to the evaluation of the  
24 disposal concept should include, among other things, a  
25 discussion of possible future changes in the nature and







1 characteristics of high-level nuclear waste.

2           The environmental impact statement should  
3 include a discussion of the risks to the natural and  
4 human environment resulting from the disposal system.  
5 This discussion should include the processes and  
6 mechanisms through which radioactive and other  
7 contaminants may directly or indirectly impact on  
8 various organisms in the environment.

9           The delineation of the target groups within  
10 the biota which are considered to be in the greatest  
11 risk category, the risk criteria which relate to human  
12 health and to environmental protection aspects of waste  
13 disposal, and finally among others, the risk from  
14 transportation and waste handling procedures.

15           The scientific review group understands that  
16 the proposed concept is based on permanent disposal at a  
17 centralized facility in plutonic rocks of the Canadian  
18 Shield. That the rationale for permanent disposal is to  
19 relieve future generations from the burden of caring for  
20 the waste, and that the concept calls for eventual  
21 closure of the vault at which time the waste would  
22 become inaccessible.

23           Some fundamental questions which may affect  
24 the technical merits of this concept need to be  
25 considered.







Over the last decade the philosophy of our society, with respect to waste management in general, has undergone significant changes. The present trend is increasingly toward reuse and recycling of waste. As some aspects of waste disposal practiced only generations ago are unacceptable today, we may ask ourselves whether or not the concept of "disposal" itself will be technically and socially acceptable to future generations. Does the proposed concept have the capability to accommodate changes in societal attitudes and waste management technology and changes in the desirability for the eventual reuse or reprocessing of the waste?

The understanding of environmental hazards and risks to the human and natural environment has undergone significant changes over the last few decades. The cumulative effects of exposure to many of the environmental pollutants in existence today are still poorly understood. Does the concept provide flexibility with respect to future changes in this understanding, and with respect to changes in environmental and regulatory standards?

Is the concept based on the assumption that future reactors will produce high-level waste at the same rate and with the same characteristics as today's





1 reactors, or is some flexibility provided with respect  
2 to possible changes in the amount of the hazardous waste  
3 or the degradability of the waste?

4 In view of the long time scale over which the  
5 waste must be isolated, many uncertainties, such as the  
6 possibility of earthquakes, meteorite impact, terrorism  
7 or armed conflict may arise. How are these  
8 uncertainties taken into account in the development of  
9 the basic concept?

10 Is the lack of accessibility after closure  
11 acceptable, or should the concept provide for extended  
12 control and retrievability of the waste?

13 What monitoring procedures are to be  
14 established with respect to the critical aspects such as  
15 the long range evolution of the ground water, the ground  
16 water quality and of the rock temperature and the  
17 possibility of radionuclide migration? How is the  
18 desirability of monitoring reconciled with the concept  
19 of permanent disposal and abandonment?

20 How does the concept allow for remedial  
21 action to be undertaken in the case of unforeseen  
22 circumstances during the construction, loading and  
23 operation of the facility?

24 What criteria will be used in making a  
25 decision to close and abandon the site? The statement







1 should provide justification for the choice of a  
2 plutonic rock host environment in light of the following  
3 considerations.

4 Fracture systems in the plutonic rock mass  
5 are difficult to characterize accurately. The ground  
6 water flow system at the site will be governed by these  
7 fracture systems and the ground water flow system in  
8 turn will govern contaminant migration. In view of  
9 these uncertainties, is the choice of a plutonic rock  
10 host environment justified?

11 It is often said that the plutonic rock of  
12 the Canadian Shield has been stable for millions of  
13 years and is therefore likely to remain so. How is the  
14 stability defined? How can phenomena, such as  
15 earthquakes and mining induced rock bursts be reconciled  
16 with the notion of stability? Can small deformations  
17 sufficient to change the fracture characteristics occur  
18 in a rock that is considered to be stable?

19 External processes such as meteorite impacts,  
20 changes in sea level, may have a bearing on the choice  
21 of the host environment. Does the fractured plutonic  
22 rock provide a reasonable resilience in the case of such  
23 disturbances?

24 The choice of a deep burial disposal implies  
25 that the vault will become saturated with water after





1 closure. In view of consequences, such as container  
2 deterioration, radionuclide migration in the ground  
3 water and biodeterioration, is the condition of water  
4 saturation acceptable?

5 It is understood that the concept is designed  
6 to accommodate the amount of waste that would accumulate  
7 by a target date approximately 50 years from now  
8 allowing for a modest annual increase in nuclear power  
9 generation. Does the concept provide sufficient  
10 flexibility with respect to the amounts of waste  
11 generated under different scenarios?

12 Possible extreme scenarios that should be  
13 considered are, a phase-out of nuclear power generation,  
14 a freeze in the construction of nuclear power plants  
15 effectively freezing waste generation at present levels,  
16 and a phase-out of fossil fuel electrical power  
17 generation and an ensuing major increase in nuclear  
18 power generation.

19 The statement should discuss the advantages  
20 and disadvantages of possible alternatives to the basic  
21 concept of centralized permanent disposal, as well as  
22 those of alternative host environments, wet or dry, such  
23 as shale, salt, and others, that may be considered in  
24 the Canadian context.

25 The discussions should include, but not be





1 confined to the following; continued above ground  
2 storage, controllable retrievable monitored storage in a  
3 centralized underground waste management facility, and  
4 underground storage in a dry environment.

5 The scientific review group understands that  
6 mathematical modelling forms a key component in  
7 evaluating the performance of the repository.

8 The EIS, the environmental impact statement,  
9 should discuss the philosophy of modelling as part of  
10 the waste repository performance evaluation. This  
11 discussion should cover but not be restricted to the  
12 following;

13 A clear statement of objectives and  
14 limitations of modelling. The procedures adopted for  
15 verification and validation of the models used for the  
16 evaluation of the repository performance over the full  
17 predicted life.

18 If validation involves a time scale much  
19 shorter than the real time scale of the system, then the  
20 objectives and the purpose of the modelling itself  
21 should be justified.

22 Is the range of processes represented in the  
23 models adequate for the long time scale involved? Are  
24 the parametric probability functions used adequate for  
25 the long time scale? Is the adopted method of dealing







1 with uncertainties a valid one? What are the confidence  
2 limits in the results produced by the models, and how  
3 can these confidence limits be expressed.

4 The statement should describe the process of  
5 model selection. This discussion should include the  
6 criteria used, the assumptions made, the flexibility  
7 available to respond to unforeseen circumstances, the  
8 ability to incorporate new information into the models,  
9 a justification of the simplifying assumptions,  
10 including the dimensionality of the models, an estimate  
11 of the influence of assumptions on the result and safety  
12 factors, the approach used to represent uncertainty, and  
13 the method and justification for the selection of the  
14 physical parameter ranges.

15 We understand that a major tool for obtaining  
16 insight into the complexities of repository performance  
17 is the identification, selection and analysis of a wide  
18 range of scenarios.

19 A discussions of scenario analysis should  
20 include the identification of the relevant physical,  
21 chemical and biological factors to be included in a  
22 particular scenario, and the justification for rejecting  
23 other factors, and also the criteria for the selection  
24 or rejection of an individual scenario.

25 The physical system that hosts the repository





1 will evolve through several definable stages. The  
2 environmental impact statement should describe how the  
3 system will respond during these stages, and how this  
4 response is simulated.

5 Of particular interest is the modelling of  
6 the interactions between the various physical and  
7 biological processes. A time chart would be useful in  
8 portraying this description.

9 The simulation should involve comparisons  
10 between the initial state, that is, the baseline  
11 environment, and conditions during the construction  
12 stage, during the loading stage, and the stage  
13 immediately following closure.

14 The statement, the environmental impact  
15 statement, must address the possibility that significant  
16 transport pathways and scenarios may not have been dealt  
17 with adequately because of conceptual and numerical  
18 simplifications made for computational convenience.

19 The multiple barrier system is designed to  
20 provide a fail safe system that acts to prevent  
21 radionuclides from reaching the surface where each  
22 component of the system becomes active as the preceding  
23 component fails.

24 The system consists of the engineered  
25 barriers, which comprise the used fuel itself, the







1 container, the sealing materials, the rock mass barrier,  
2 and a system of natural barriers in addition, extending  
3 into the surface environment.

4 The statement should describe each of these  
5 components, its specific functions and expected  
6 performances and, in particular, the linkages among the  
7 various components. This may be accomplished in part by  
8 the use of time charts showing the expected times at  
9 which radionuclides are presented by each component of  
10 the system to the next one in the series.

11 The discussion should include an explanation  
12 of uncertainties and it should consider plans for the  
13 evaluation of the performance of the components and of  
14 the total system under expected vault and natural  
15 conditions.

16 The EIS should further demonstrate that  
17 adequate long-term performance criteria have been  
18 developed for each of the components of the system and  
19 for the system as a whole.

20 The environmental impact statement should  
21 demonstrate the method to construct, fabricate, evaluate  
22 and emplace the various components of the engineered  
23 barrier system.

24 The chemical and physical forms of the used  
25 fuel are important in delaying the migration of





1 radionuclides after breaching of a container. The  
2 effectiveness of the used fuel itself, as a barrier,  
3 should be described, taking into account its chemical  
4 and physical stability and susceptibility to damage from  
5 its own radiation and heat.

6 The inventory of hazardous components in the  
7 used fuel must be described, and in particular the  
8 important radionuclides and the heat production must be  
9 discussed as a function of time.

10 The environmental impact statement must  
11 identify at each stage the most critical nuclides.  
12 Describe the relevant chemical and physical properties  
13 of the critical nuclides, identify possible dissolution  
14 mechanisms including biologically mediated mechanisms  
15 and selective leaching.

16 The effect of heat and radiation on the  
17 physical and chemical integrity of the used fuel forms  
18 must be discussed, particularly with respect to the  
19 rates of ultimate release of specific radionuclides.

20 It is understood that the first barrier  
21 against the spread of the radionuclides is to be the  
22 container, and that its failure is likely to be by  
23 breaching, either by corrosive action of the ground  
24 water in the vault or by crushing action of geological  
25 pressures. The environmental impact statement should







1 discuss the circumstances and mechanisms leading to  
2 these two modes of failure and describe measures to  
3 delay breaching and minimize its effects.

4 The statement must describe and justify the  
5 design and manufacturing criteria applied to the  
6 container system. It must describe the predicted  
7 performance of the container system, and this  
8 description must identify all probable modes of failure  
9 of the container taking into account the  
10 thermomechanical history from fabrication time through  
11 emplacement time.

12 The statement must describe methods to be  
13 used for observing the integrity and performance of the  
14 container under vault conditions.

15 It is understood that the vault system is to  
16 constitute a major early barrier and that will be the  
17 last barrier before the radionuclides reach the rock  
18 mass and ground water flow system.

19 The statement must describe all aspects of  
20 the vault design, construction, operation, sealing and  
21 subsequent monitoring that bear on its impact on the  
22 environment.

23 The environmental impact statement must  
24 describe the potential for, and consequences of  
25 unplanned events such as collapse or closure of the







1 underground excavations during loading and early  
2 monitoring stages. This should include a discussion of  
3 the method and hazards of handling the used fuel at  
4 various stages of the transport and loading of the  
5 vault.

6 The statement should describe the criteria to  
7 be used in making the decision to seal the vault. This  
8 description should include an assessment of acceptable  
9 differences between the forecast and the observed  
10 performance of the vault during the earliest part of its  
11 history.

12 It is understood that the sealing program is  
13 intended to ensure that ground water intrusion is  
14 limited and maximum retardation of radionuclides and  
15 other constituents is achieved.

16 The statement should describe the sealing  
17 program, including the nature and evaluation of the  
18 sealing materials, the transportation, emplacement and  
19 compaction methods and the equipment used, and the  
20 modelled long-term performance and integrity of the  
21 sealing materials in the expected vault conditions.

22 The environmental impact statement should  
23 discuss the modelling of the engineered barrier system,  
24 and this should include the assumptions made concerning  
25 processes and parameters, and the justification for





1 making these assumptions. Any uncertainties in the  
2 ranges of the parameters used to describe the relevant  
3 processes and properties, the reliability and  
4 sensitivity of mathematical models for the long-term  
5 prediction of rock mass behavior and contaminant  
6 migration.

7 We understand that the rock mass enclosing  
8 the disposal vault is expected to act as a principal  
9 barrier to the migration of radionuclides from the vault  
10 to the surface environment.

11 The statement should identify the critical  
12 pathways and mechanisms for contaminant transport. It  
13 should demonstrate a knowledge of those rock  
14 characteristics and processes that will govern  
15 radionuclide migration and should describe the changes  
16 that may occur in these characteristics and processes,  
17 both over the short-term and the long-term.

18 We understand that the flow of ground water  
19 will be controlled by major fracture zones and that  
20 critical pathways will be within these fracture zones.

21 The discussion should include the methods to  
22 identify and characterize fracture systems and major  
23 fracture zones.

24 The ranges of rates and volumes of fluid flow  
25 through the rock mass that might be expected under







1 present and future conditions.

2 Channelization of ground water flow within  
3 individual fracture zones and the methods for  
4 determining rates and locations of channelized flow,  
5 including the confidence limits on these determinations.

6 Critical pathways, mechanisms and residence  
7 times for contaminant migration through the rock mass  
8 and critical modes of transport for the most mobile  
9 radionuclides, liquids or gases, should be discussed.

10 There should be discussion of short-term or  
11 transient changes such as might be expected in the  
12 property of the rock mass and ground water system during  
13 the establishment of the repository.

14 Of long-term changes, for example, related to  
15 global climate change, post glacial isostatic rebound or  
16 even renewed glaciation.

17 Potential changes in the relevant properties  
18 and processes of the rock mass due to stress changes or  
19 possible geological events such as earthquakes must be  
20 considered and procedures for and limitations of seismic  
21 risk assessment should be addressed.

22 The environmental impact statement should  
23 include a description of the models used to represent  
24 processes and mechanisms in the rock mass and the ground  
25 water system. This should include assumptions made





1 concerning these processes and mechanisms and the  
2 justification for making these assumptions.

3 The method chosen for representing fracture  
4 zones and the flow within these fracture zones,  
5 including channelized flow, and the justification for  
6 the choice.

7 The method chosen for translating results of  
8 hydrogeologic tests into input parameters for models.

9 The uncertainties in the ranges of parameters  
10 used to describe relevant processes and properties, and  
11 in the expected changes in those parameters over time.

12 The reliability and sensitivity of  
13 mathematical models for long-term prediction of rock  
14 mass behavior and contaminant migration.

15 The criteria adopted for the rejection of a  
16 rock mass barrier, these include its hydraulic,  
17 physical, chemical and biological properties, as well as  
18 the seismic assessment of the rock mass should also be  
19 stated.

20 THE CHAIRMAN: Dr. Price, I hesitate to do  
21 so, but I would remind you that you have -- you are  
22 close to the 25 minutes and I hope that it would be  
23 possible to summarize the rest in relatively short time.

24 DR. PRICE: I'll summarize a statement about  
25 the environmental impact.





1           The overall purpose of the waste repository  
2       is to reduce or control the effect of waste products on  
3       the natural environment, now and in the future.

4           The statement should include a discussion of  
5       all expected and potentially significant impacts of the  
6       disposal facility and its contents on both the human and  
7       natural environments. It must address several different  
8       scenarios with respect to the amount of waste that may  
9       be accommodated, including the no growth scenario and  
10      the major growth scenario.

11          A discussion on impacts should include the  
12      use of time charts which document the changes in  
13      critical parameters at key intervals and at important  
14      locations in the vault, the rock mass, and the surface  
15      environment.

16          One critical aspect of the proposal is site  
17      investigation and characterization. In addition to  
18      developing an acceptable concept for the disposal of  
19      high-level nuclear wastes, the environmental impact  
20      statement should demonstrate a capability for  
21      investigating and characterizing actual candidate sites  
22      in the Canadian Shield or perhaps elsewhere.

23          Characterization procedures must include  
24      unambiguous criteria for determining when an actual site  
25      satisfies the generic requirements for acceptability, as







1 well as criteria for rejection.

2 The characterization procedures should  
3 integrate physical, environmental and socio-economic  
4 aspects.

5 It is our hope that our recommendations and  
6 our proposals for questions to be addressed by the  
7 environmental impact statement will help Atomic Energy  
8 of Canada Ltd. address all pertinent, scientific and  
9 technical questions clearly, comprehensively and  
10 succinctly. It is also our hope that this will help the  
11 Panel and the interested public to make a thorough and  
12 reliable assessment of the scientific and technical  
13 aspects of the proposed concept for dealing with  
14 Canada's nuclear fuel wastes.

15 Thank you.

16 THE CHAIRMAN: Thank you very much, Dr.  
17 Price, for this oral presentation of the highlights of  
18 your report. I can assure you that we shall all be  
19 reading it most carefully and I understand the final  
20 version will be with us in a matter of a few days and we  
21 will be no doubt be back to you -- or may well be back  
22 to you with some questions after that.

23 I wonder, however, at this stage whether the  
24 members of the Panel have any questions to ask just on  
25 the basis of the oral presentation which Dr. Price has





1 given?

2 Dr. LaPierre.

3 DR. LAPIERRE: Dr. Price, trying to follow  
4 you through the presentation, and maybe it's included in  
5 your presentation, in your report, but on the baseline  
6 environmental data, have you indicated time frames that  
7 are required for the data through time before we can  
8 adequately assess change?

9 DR. PRICE: Our consideration of the baseline  
10 environment was in terms of the environment as it exists  
11 or would exist without the intervention of the  
12 repository, and so it involves a description of  
13 processes that apply now and a consideration of changes  
14 that might occur without the effects of a repository,  
15 and it represents the framework against which the  
16 impacts should be assessed.

17 THE CHAIRMAN: Mr. Van Vliet.

18 MR. VAN VLIET: Dr. Price, you have mentioned  
19 the issues of monitoring, and have asked for some  
20 description of monitoring methods and facilities that  
21 are to be put in place.

22 Has the scientific review group considered  
23 for how long these monitoring facilities should remain  
24 in place, or have they considered asking that it be  
25 included in the EIS? And secondly, about the







1     survivability of a monitoring system considering  
2     potential alterations of the environment.

3             DR. PRICE: We have no specific  
4     recommendation to make on how long a monitoring system  
5     should operate, but we ask the question as part of the  
6     environmental impact statement. What attention should  
7     be devoted to monitoring, both on the short-term while  
8     the facility is open, and afterwards, and the response  
9     to that question, I think is, must be, integrated with  
10    the evaluation of the whole proposal, and it's something  
11    that we think Atomic Energy Canada should address in  
12    their environmental impact statement. If the conclusion  
13    is that monitoring need not go on for a long time then  
14    justification for that conclusion would be included.

15            MR. VAN VLIET: Thank you.

16            THE CHAIRMAN: Dr. Wilson.

17            DR. WILSON: Your last section there on site  
18    characterization procedures, you've mentioned that the  
19    characterization procedures should integrate physical,  
20    environmental and socio-economic aspects. Are you  
21    looking then to Atomic Energy of Canada to do that  
22    integration, and to do the same kind of careful research  
23    in the socio-economic aspect as in the physical?

24            DR. PRICE: Although our mandate has been  
25    scientific and technical, we realize that there is an





1 interface with social and economic considerations almost  
2 across the full spectrum of the project, and site  
3 selection seemed to us to be by far the most critical  
4 area, and so we stepped into this foreign field of  
5 social and economic considerations in this one place,  
6 and it seemed to us quite clear that the integration  
7 must be designed into the selection process right from  
8 the start.

9 THE CHAIRMAN: Other questions?

10 Dr. Price, thank you very much indeed. As I  
11 say, we shall be studying your report most carefully and  
12 we count on your assistance, continuing assistance, as  
13 we go on with our work.

14 ---Dr. Price withdraws

15 THE CHAIRMAN: The next participant for this  
16 afternoon is Mr. Charles Fox who will make a  
17 presentation on behalf of the Nishnawbe-Aski Nation, and  
18 I've had an indication that possibly Ms. Cathy Star  
19 would like to be at the table with you at that time, or  
20 is she making a subsequent presentation? No? All  
21 right. Fine. Please go ahead then.

22 PRESENTATION BY CHIEF FOX:

23 Thank you very much, Mr. Chairman. Members  
24 of the Panel, ladies and gentlemen, my name is Charles  
25 Fox. I am Deputy Grand Chief for Nishnawbe Aski-Nation.





1                   Nishnawbe Aski-Nation is an umbrella  
2 organization for a large number of communities that fall  
3 within the ambit of Treaty #9. NAN has conferred with  
4 the Assembly of First Nations and with other native  
5 groups in seeking to identify the issues which we hope  
6 that this Panel will see fit to include in the  
7 guidelines which it will be submitting to the AECL, and  
8 to which we hope this Panel will give serious  
9 consideration. Therefore, some of the concerns we  
10 express may be shared by other First Nations, while some  
11 of our concerns relate to our specific interests.

12                   We also note this Board may see fit to expand  
13 its terms of reference and therefore we provide our  
14 submissions.

15                   The Nishnawbe Aski-Nation represents 46  
16 communities in Northern Ontario with communities  
17 stretching as far south as the Canadian National Rail  
18 Line and as far north as Winisk on the shores of Hudson  
19 Bay and James Bay.

20                   Many of these communities lie within the  
21 Canadian Shield. At this time we do not know which  
22 communities lie within the types of rock formation in  
23 which AECL proposes to establish its disposal facility  
24 for nuclear fuel wastes. However, given NAN's  
25 geographic location, we strongly believe that one or







1 more of our communities will be affected by the proposal  
2 if it is accepted, either because of being located  
3 within the areas AECL has identified as potential areas  
4 for consideration, or because of the potential effects  
5 of related activities for this facility, such as access.

6 The communities of Nishnawbe Aski have a  
7 unique relationship with the land. That must be  
8 understood at this hearing. This is our land. We have  
9 survived here for many years, but the land and the First  
10 Nations that have long lived on this land continue to be  
11 threatened by the actions that many private companies  
12 and government agencies wish to carry out. It seems  
13 that they consider this land to be mere empty space to  
14 be exploited.

15 Many of our people practice a traditional way  
16 of life. We are involved in traditional pursuits like  
17 hunting, trapping, fishing and gathering. These  
18 activities, which stretch well beyond the boundaries of  
19 our communities, as well as other activities related to  
20 economic development initiatives are whittled away by  
21 the many activities which benefit other people of  
22 Ontario, but which have provided no benefits to our  
23 people.

24 Logging, mining and development of hydraulic  
25 power, with the associated provision of access to remote





1 native communities has resulted in many negative  
2 environmental effects. Mercury poisoning,  
3 contamination of our water supplies and other more  
4 subtle effects on our traditional activities are just a  
5 few examples.

6 The effects of these activities by  
7 themselves, let alone their cumulative effects on our  
8 that traditional way of life, have been overlooked or  
9 largely ignored. Even less attention is paid to the  
10 effect of all these activities on our treaty and  
11 aboriginal rights and on our land claims.

12 For the Panel's information, Nishnawbe Aski  
13 has several land claims outstanding at this time. A  
14 claim by the Moose Factory First Nation for lots on  
15 Moose Factory Island, a claim against Ontario Hydro and  
16 the federal government for compensation for damage to  
17 the Mattagami reserve land, and to timber resources near  
18 Gogama. The Brunswick House First Nation has a  
19 validated land claim for land near Chapleau. Osnaburgh  
20 has several outstanding claims for land and compensation  
21 relating to expropriation of their lands. Long Lac  
22 First Nation has several claims relating to the taking  
23 of timber, land erosion and the passage through it of  
24 the CN Rail line. In addition, the Wahgoshig First  
25 Nation is also in the process of considering a land







1 claim near Lake Abitibi.

2 All of these claims take a very long time,  
3 too long a time, to be dealt with. As time passes  
4 southern development continues to march onto our land,  
5 and our land claims continue to wait in limbo.

6 The Nishnawbe Aski communities also engage in  
7 aboriginal activities across a very large portion of  
8 Ontario. In fact our treaty area, Treaty #9 territory,  
9 covers approximately two thirds of Ontario's land mass  
10 and aboriginal activities are carried out on a large  
11 percentage of that land.

12 Now AECL proposes the concept of building of  
13 a disposal site for nuclear fuel waste that may cause a  
14 variety of effects on one or more of our communities,  
15 especially if the facility sitting is to be close to a  
16 remote community. Obviously, Nishnawbe Aski has very  
17 real concerns about the safety and reliability of such a  
18 facility.

19 We understand that this Panel has indicated  
20 at this time that it will not be seeking to hear about  
21 energy policy matters that are being dealt with in other  
22 forums, other forums like the Ontario Demand Supply  
23 Plan, at which Nishnawbe Aski is a full-time party.

24 However, we feel it is very important for  
25 this Panel to understand that this separation of





1 consideration of the safety and acceptability of nuclear  
2 generating stations and consideration of the safety and  
3 acceptability of nuclear waste disposal facilities  
4 misses a very important point. Will there ever be  
5 consideration of the entire costs of nuclear generation,  
6 including disposal of nuclear wastes?

7 We are afraid that the approach this Panel  
8 wishes to take means that there will never be a chance  
9 to properly consider the full costs which nuclear power  
10 is costing Ontario. Furthermore, we believe that these  
11 costs will hit our people, but will not be accompanied  
12 by any of the benefits.

13 As with the many other activities that are  
14 carried on in the area covered by Nishnawbe Aski, we are  
15 very concerned with what appears to be another situation  
16 where the Nishnawbe Aski communities may be asked to  
17 shoulder a disproportionate degree of the risks so as to  
18 provide southern Ontario and other southern parts of  
19 Canada and even the northern parts of the United States  
20 with electricity that nuclear fuel provides.

21 The reason AECL is proposing this concept is  
22 so that the nuclear waste from fuel, which is used to  
23 provide electrical power to southern white communities,  
24 can be disposed of. Most of our communities in  
25 Nishnawbe Aski-Nation are not even serviced by





1 electricity. We do not see any of its benefits, just  
2 its costs.

3 We are, therefore, very concerned about the  
4 impacts that this facility could have on our  
5 communities, and indeed we wish to have this Panel  
6 consider in terms of its equitable impact the very idea  
7 of building such a facility within our territory, given  
8 the injustice and disproportion of risks and benefits.

9 We are also very concerned with the potential  
10 impacts that such a facility would have were it to be  
11 sited within our territory. These impacts relate to our  
12 traditional activities. To our treaty and aboriginal  
13 rights and to our specific land claims.

14 For all of these reasons, I ask that this  
15 Panel should take into account a number of  
16 considerations in submitting its guidelines to AECL and  
17 in determining the scope of matters you will be  
18 considering in this environmental assessment.

19 Point number one, an aboriginal member on the  
20 Panel. In Nishnawbe Aski-Nation's opinion it would be  
21 appropriate to have an aboriginal member sitting on this  
22 Panel. The reasons for this are many, but one clear  
23 reason is that such a person would be able to bring a  
24 perspective to the other Panel members on the realities  
25 of living in First Nation communities.







1 Point number two, separate consideration of  
2 impacts on First Nations and other communities. It is  
3 very important that this Board not miss the nature and  
4 extent of the concerns and potential impacts on First  
5 Nation communities by advising AECL to do an impact  
6 analysis that treats all communities on equal footing.

7 First Nation communities are very different  
8 from other communities and deal with very different  
9 problems and issues from those which face other  
10 communities. These differences must be dealt with in  
11 AECL's impact analysis.

12 Point number three, community visits. In  
13 order to begin to appreciate the nature of our  
14 communities and the potential impact development of  
15 AECL's concept could have, we support the suggestions of  
16 other First Nations organizations regarding the need to  
17 visit some of the potentially affected communities.

18 Without knowing the precise boundaries of the  
19 geographical area where AECL thinks it would be possible  
20 to site a disposal facility, we are not in a position to  
21 suggest the names of those communities at this time, but  
22 it would appear to be sensible to include visits to some  
23 of the remote communities. We also think it might be  
24 advisable for you to do so in the coming winter months  
25 before you finalize the guidelines to be provided by





1 AECL. Doing so at this time will allow you to  
2 appreciate the potential difficulties associated with  
3 seemingly simple questions like transportation.

4 Before visiting the communities, the selected  
5 communities should be provided with a video presentation  
6 or some other visual presentation regarding AECL's  
7 proposal, with appropriate translation, and perhaps  
8 attendance by an AECL representative so that the Panel  
9 will not be coming into the communities cold.

10 Point number 4, considerations relating to go  
11 the Panel's terms of reference.

12 4.1) Criteria for safety and acceptability.  
13 Safety and acceptability criteria must give specific  
14 consideration to safety and acceptability to our people.  
15 The Panel should consider treaty and aboriginal rights  
16 in this context and should give specific consideration  
17 as whether consent of our people to the very concept of  
18 such a disposal site in an area which falls under Treaty  
19 #9's territory is required as a result of these treaty  
20 and aboriginal rights.

21 4.2) Burden on future generations. Again we  
22 believe that the Panel should give specific  
23 consideration to which future generations would be  
24 burdened by AECL's concept. In other words, the Panel  
25 should give specific consideration to whether the







1 concept places an inappropriate burden on future  
2 generations of native people who live in the area chosen  
3 for implementation of the concept.

4 4.3) Social, economic, environmental impacts  
5 of implementing the concept. Too often proponents who  
6 have submitted environmental assessments either do not  
7 consider the social economic and environmental impacts  
8 on native individuals and communities at all, or they  
9 present an exceedingly simply analysis of these impacts.

10 The Panel should very specifically guide the  
11 proponent to produce a detailed impact analysis that  
12 describes the effects of implementation of the concept  
13 on the land base needed for healthy native communities.  
14 The health of our community members, our economies,  
15 including employment considerations, the wildlife and  
16 plants which we harvest and use in our traditional  
17 lifestyles and our spiritual, cultural and heritage  
18 values.

19 Equally important is that AECL be required to  
20 consider the impacts on First Nation communities in NAN,  
21 not in isolation, but giving consideration to the  
22 cumulative effects of this facility together with all  
23 other developments that have affected Nishnawbe Aski  
24 communities.

25 If AECL is not required to do this analysis





1 at this stage, what will happen is that the concept will  
2 be approved and when it comes to actually getting the  
3 facility up and going, study impacts could show that  
4 there is really no acceptable way to mitigate the  
5 impacts. However, with concept approval in hand, AECL  
6 would argue that they have a right to site the facility  
7 somewhere, and trying to obtain totally ineffective  
8 mitigation measures will be the only thing left to our  
9 people.

10 It is for these reasons that I would ask the  
11 Panel to give very specific consideration to the impacts  
12 of AECL's concept on native people and to direct AECL  
13 accordingly.

14 4.4) Siting process and criteria. Assuming  
15 for the moment that approval for the concept in an area  
16 affecting NAN communities were to be given, we submit  
17 that key criteria the Panel should consider include  
18 the following: a) extent of aboriginal land use,  
19 including traditional and economic uses. b) the  
20 establishment of suitable buffer areas around  
21 potentially affected NAN communities. c) compensation  
22 of affected NAN communities. d) effect of aboriginal  
23 and treaty rights on siting considerations, including  
24 consideration of whether consent of the community is  
25 required as part of their right.





1                   We also believe that the process for  
2                   establishing siting criteria must include extensive  
3                   participation by aboriginal communities. That is much  
4                   more than holding open houses in distant towns, and is  
5                   much more than asking for our comments without giving us  
6                   sufficient funding to provide educated input.  
7                   Therefore, we must have adequate funding, and it should  
8                   not be provided to us only weeks before the hearings  
9                   begin. We need funding now if we are able to do any  
10                  proper study of this concept.

11                  In making these suggestions about siting  
12                  process and criteria, I do not want to give the Panel  
13                  the impression that we are implicitly saying we think  
14                  that this type of disposal is unavoidable. I emphasize  
15                  that this Panel should never lose sight of the fact that  
16                  what it is being asked to assess is a concept not a  
17                  site.

18                  Any discussion of siting criteria cannot be  
19                  had on the implicit assumption that the concepts will be  
20                  approved.

21                  Transportation of wastes, risk of injury to  
22                  NAN members, whether on the highway or as a result of  
23                  their living on the land through which waste is  
24                  transported must receive specific consideration.

25                  Matters to be included in the guidelines. In







1 addition to considering the issues we have raised above  
2 with respect to your terms of reference, we would ask  
3 that the Panel give consideration to including the  
4 following items in the guidelines to be issued to AECL.

5 One, what are the total costs of nuclear  
6 generation and waste disposal, not only to Ontarians in  
7 general, but to native people in particular, and are  
8 these costs acceptable.

9 Two, AECL must give a thorough analysis of  
10 all the alternatives to disposal in the Canadian Shield.  
11 The criteria for safety and acceptability should be used  
12 to analyse these alternatives.

13 Three, emergency response planning should be  
14 specifically addressed.

15 Four, as one of the alternatives to this  
16 concept, AECL should compare the risks and benefits of  
17 continuing the storage of nuclear fuel wastes at reactor  
18 sites to the risks and benefits of AECL's proposed  
19 concept. In so doing, they should give consideration to  
20 the equitable criteria discussed above.

21 Five, what implications does implementing  
22 this concept have for the cost of nuclear energy?

23 Six, what is AECL's intention with respect to  
24 permitting other countries to making use of this  
25 facility? If they do so, how acceptable is this to





1 Canada generally, and specifically to First Nations who  
2 could bear the brunt of the risks. If there is a  
3 possibility that this site would be used for disposal by  
4 other nations, then AECL should address the potential  
5 risks of this disposal at this time, not once they have  
6 a contract in hand to accept other countries' nuclear  
7 wastes.

8 Thank you very much, Mr. Chairman.

9 THE CHAIRMAN: Thank you, Chief Fox, for that  
10 very precise and very comprehensive presentation which  
11 we will certainly want to read again, as well as  
12 listening, as we have, carefully to you.

13 Are there any questions which the Panel  
14 members would like to put to Chief Fox?

15 THE CHAIRMAN: Mr. Van Vliet.

16 MR. VAN VLIET: I have a question of  
17 clarification. You mention that the Treaty #9 territory  
18 covers approximately two thirds of the Ontario land  
19 mass.

20 Am I to understand that two thirds of the  
21 land mass of Ontario is the territory of your nation?

22 CHIEF FOX: Well, I guess Treaty #9 -- maybe  
23 if I can just clarify that. Nishnawbe Nation  
24 encompasses two treaty areas and that is Treaty #5,  
25 which runs through a certain portion of Manitoba and







1 onto Northwestern Ontario, and Treaty #9 which basically  
2 covers the rest of Northern Ontario, but those two  
3 treaty areas -- our Nishnawbe Aski-Nation area does  
4 cover two thirds of Ontario.

5 MR. VAN VLIET: Okay. Thank you.

6 THE CHAIRMAN: Other questions? Dr. Wilson.

7 DR. WILSON: I'm interested that you've  
8 highlighted that it would be important to give  
9 consideration to the cumulative effects of what you  
10 perceive as negative effects on your people. Do you  
11 want to say something more about that or would you?

12 CHIEF FOX: Well, when we look at development  
13 overall, I suppose if you want to look at specifically  
14 energy, the Ontario Hydro Demand Supply Plan calls for  
15 four different approaches to meet the electrical needs  
16 for Ontarians over the next 25 years, and in that report  
17 they're calling for hydraulic development of various  
18 sites of rivers in Northern Ontario. And one of those  
19 sites basically right now is the Moose River Base. That  
20 will effect approximately 12 of our First Nations. But  
21 that does not restrict other activities with respect to  
22 other rivers.

23 All our communities are accessible to all  
24 four or five, I believe, water sheds or river systems in  
25 Northern Ontario and if there is potential development,





1 hydraulic development of those rivers, then it will  
2 affect us negatively with respect to our traditional  
3 activities of hunting, fishing and trapping.

4 So you do have those cumulative impacts and  
5 we have yet to see development, or we have yet to see  
6 benefits of those developments.

7 The majority of our communities right now are  
8 serviced by generating stations through diesel power  
9 generation. Some of our communities don't have  
10 electricity at all. In fact it's safe to say that the  
11 majority of our communities are still existing in third  
12 world living conditions with respect to the amenities  
13 that the rest of Southern Ontario enjoys. So that's  
14 what I mean by that statement.

15 It does have an accumulating effect and it  
16 does -- we get concerned about that when we see  
17 developments that occur around us and we don't see any  
18 benefit coming to our communities or to our people.

19 THE CHAIRMAN: Dr. LaPierre.

20 DR. LAPIERRE: Chief Fox, thank you for your  
21 presentation. One of the items that you indicated in  
22 your report was that we visit some communities. You  
23 also indicated that prior to the visits you would need  
24 some information to get your thoughts together. Do you  
25 have any indication how long it would take you to do the







1 information or education that you need amongst your  
2 people before you would be ready for such a visit?

3 CHIEF FOX: That's an interesting question  
4 because we are in the process of producing a videotape  
5 with respect to the Hydro Demand Supply Plant and the  
6 majority of our communities still speak their aboriginal  
7 tongue as their first language. So there's a large  
8 amount of translation that is required and there's  
9 volumes of very technical data that is being produced by  
10 Ontario Hydro that we are attempting to synopsise and  
11 distribute to our communities.

12 And also I guess the other problem that we  
13 have is there are eight existing dialects in our area,  
14 but we have managed to up come up with two different  
15 dialects that we can reproduce translation with respect  
16 to video production or production of documentation.

17 So in that respect, giving a time frame to  
18 come up with a video presentation or a translated  
19 document at this point in time is hard for me to  
20 pinpoint, but I would surmise that with the expertise  
21 that we are generating with respect to the Hydro Demand  
22 Supply Plan work that we are engaged in presently, that  
23 it wouldn't be too hard to produce say more translation  
24 work for the work that you people are engaged in and to  
25 produce a video that we see a need for.







1                   See, the concept of electricity for our  
2 people is something that is new. Many of our  
3 communities have just received hydro electrification  
4 over the last, I would guess, around the late 70's. The  
5 majority of our communities have started to receive  
6 hydro electrification, and a lot of our communities have  
7 not really sat down to project their electrification  
8 needs or their energy needs for the future. Now that is  
9 part of the work that we have to do. We have to  
10 demonstrate to our communities that if they are going to  
11 enjoy electrification that there are things that they  
12 have to take into consideration. Issues like nuclear  
13 waste or nuclear generation. Issues like hydro  
14 generation, hydraulic generation, solar energy. That's  
15 all very foreign and alien to them, and so the  
16 educational process that you're talking about is one  
17 that we are certainly, at this point in time,  
18 encouraging. But just to pinpoint a time frame I can't  
19 do it.

20                   THE CHAIRMAN: Other questions? Madam Roy.

21                   MS. ROY: Chief, you said in your submission  
22 that First Nation communities are very different from  
23 other communities and that the differences must be dealt  
24 in AECL's impact analysis.

25                   I would like you to speak a little more on





1 how those differences have to be dealt with at the level  
2 of a concept assessment, without any site being selected  
3 for the burial of the waste.

4 CHIEF FOX: Well, I guess with respect to our  
5 concept of the land -- the concept of the land that is  
6 viewed by the Canadian public at large is very  
7 different. The native people believe that this land was  
8 given to them by their creator and that they were given  
9 this land to live off of and to pass it on to future  
10 generations in pretty well the same condition that they  
11 got it.

12 The Nishnawbe Aski, our name alone, refers to  
13 the people and the land is the interpretation of  
14 Nishnawbe Aski. We have a special relationship with the  
15 land. We have a spiritual relationship with the land  
16 and exploitation of natural resources is something that  
17 we abhor, we don't agree with. But with new concepts,  
18 non native concepts being introduced to a native  
19 community, concepts for employment, concepts for  
20 economic development, those views are slowly changing.  
21 Now the native community says that for development to  
22 occur it must be development that is controlled.  
23 Development that will reap benefits, and development  
24 that will not destroy the environment.

25 So in that respect our position as native







1 people is very different from a non native society. We  
2 believe, rightly or wrongly, that this is still our  
3 land. That we never gave up our right to this land  
4 although large portions of Canada were signed away by  
5 treaties and in those treaties, it clearly states that  
6 those treaties were a land surrender. That is not our  
7 interpretation. Our Elders signed those treaties with  
8 X's. None of them spoke the English language. They  
9 didn't have lawyers to represent them during the treaty  
10 signing ceremonies, and so we still believe that those  
11 claims that we have as aboriginal people to this land  
12 are still there, and that is why I guess, we state that  
13 when you're talking about concepts, that is why we feel  
14 that native people -- the approach that you take with  
15 respect to development has to be different. I hope that  
16 answers your question.

17 MS. ROY: Thank you.

18 THE CHAIRMAN: Thank you very much indeed,  
19 Chief Fox, and we certainly noted your comments about  
20 possible visits. We've heard it from other reporters.  
21 We will be giving thought to that in the near future.

22 CHIEF FOX: Thank you very much for your  
23 time.

24 THE CHAIRMAN: Thanks for appearing.

25 ---Chief Fox withdraws





1 THE CHAIRMAN: The next person I have listed,  
2 and I'm not sure whether she's here or not, is Cathy Sky  
3 of the Grand Council Treaty #3. If she is not here,  
4 Cathy Sky is not here at present, we'll just put that  
5 name on hold and move on to the next, but certainly I'll  
6 ask again in case she's arriving at a later hour.

7 The next person I have on my list then is  
8 George Ylonen. If you would come forward.

9 PRESENTATION BY MR. YLONEN:

10 Mr. Chairman, members of the Panel, I  
11 appreciate being here today. I only wish we could have  
12 had this hearing 12 to 15 years ago, which is the time  
13 that it should have taken place, I believe, because of  
14 things that have happened in the past and up to this  
15 future -- this particular day.

16 So my letter is rather brief, but my fact  
17 sheet has information compiled in the previous years and  
18 I'll be touching on a few and I shouldn't be too long,  
19 but my name is George Ylonen, I'm from Lac du Bonnet --

20 FROM THE FLOOR: Mr. Chairman, could we ask  
21 the volume to be turned up a bit. It's difficult to  
22 hear back here.

23 THE CHAIRMAN: If you would speak fairly  
24 close to the mike that will help, but I'll ask the  
25 technicians to see if they can get a bit more volume.





1 MR. YLONEN: I can appreciate that because  
2 I'm hard of hearing and quite often I never ever sit in  
3 the back of an assembly.

4 I will start with the last paragraph in your  
5 information pamphlet that I received, and it reads, " to  
6 assist participants in obtaining information about  
7 nuclear fuel waste management, the Panel has made  
8 available a package of information containing past press  
9 releases and technical reports in the reference section  
10 of the following libraries." Well, I never included the  
11 libraries in my report and I didn't have time to visit  
12 the Winnipeg library, so my presentation may sound a bit  
13 familiar to you, if you've gone through some of AECL's  
14 press releases. I'm not going to go through technical  
15 reports because I'm not a technical man. I live in a  
16 community, a farming community and there's some mining  
17 activity goes on and I'm a miner by trade. Started  
18 mining in and around mines around 1955.

19 So for more than 13 years AECL has been  
20 making statements in every news publication and radio  
21 and TV release that deep geological vaults for high  
22 level radioactive waste is safe. AECL has also stated  
23 that foreign countries want to bring their radioactive  
24 waste to Canada. These are all documented.

25 In 1981, Dr. Hart, Vice-President of the







1 research facility at Whiteshell stated that AECL could  
2 not promise that a nuclear waste dump would not be  
3 located in the Lac du Bonnet area, and it would be up to  
4 the federal government to decide where in Canada nuclear  
5 waste from Ontario Hydro and others will be stored.

6 In 1984, Dr. Bruce Goodwin stated that he  
7 would recommend turning Northern Canada, including parts  
8 of Manitoba, into a nuclear waste disposal site for the  
9 world.

10 In 1984, former Federal Energy Minister, Pat  
11 Carney, stated that she was in favour of taking nuclear  
12 waste from other countries. She also refused to rule  
13 out Manitoba as a potential radioactive garbage dump  
14 site.

15 Klaus Neumann, an Ottawa Parliamentary  
16 reporter had interviewed high-level European and  
17 Canadian officials who stated that if offered sufficient  
18 amounts of money, Canadians would accept radioactive  
19 wastes from foreign countries for disposal in Canada.

20 The real agenda started many years ago.  
21 These scoping meetings, and with all due respect to your  
22 positions regarding the federal government and your  
23 positions, these scoping meetings, I believe, are a  
24 polite formality.

25 There are 27 countries who have made





1 radioactive wastes, have radioactive wastes and  
2 decommissioned nuclear plants that they want out of  
3 their own countries. Is Canada to become a radioactive  
4 waste disposal site for the world? That is the question  
5 and it should be dealt with first.

6 AECL has repeatedly stated that the Canadian  
7 Shield contains solid rock formations free of fractures,  
8 fault and water. This is not a true statement. It is  
9 meant to mislead the public.

10 Also in 1978 to '79, in Ottawa, the Hansard  
11 reads that 95 to 98 per cent of the people support AECL  
12 and these numbers are not true also.

13 At the back of my sheet here there is a bit  
14 of information from AECL that they have had seismic  
15 disturbances of unknown origin, and I'm sure that these  
16 releases from AECL would be in the libraries which I  
17 haven't researched, but it is also in the back of my  
18 little fact sheet here.

19 AECL has had several plans for disposal of  
20 nuclear waste. The first one was that one square mile  
21 would contain all the wastes of Canada that was  
22 generated in one hundred years. The next report came  
23 out that 16 square kilometres would be required for the  
24 nuclear waste of 50 years production, and the final  
25 report that Acres Consulting developed for AECL stated







1 for 25 years the radioactive wastes - and this not  
2 Ontario nuclear waste already, the plan is much more  
3 than nuclear waste from Ontario or Quebec or New  
4 Brunswick - that 25 year waste disposal would require 32  
5 square kilometres of area, and I believe that this is  
6 the case. That they are looking for a facility that  
7 would accommodate all these countries that are producing  
8 nuclear wastes, and a facility of such magnitude would  
9 require, at least according to A. Acres (phonetic)  
10 Consulting Report, 2,500 rooms. These rooms would be  
11 anywhere up to 600 feet long and contain millions of  
12 nuclear radioactive wastes and decommissioned power  
13 plants.

14 That is the sum total of my report. The only  
15 other thing I have to say is that on my way here today I  
16 spoke with, or stopped a number of pedestrians and asked  
17 them if they knew that there were scoping hearings  
18 taking place at the Delta Hotel, and it was cold so I  
19 only got to talk to 27 people, and 27 people had no idea  
20 that these scoping hearings were taking place. So I  
21 would say that -- this isn't a gallup poll but this is  
22 correct within 99.99/100 per cent.

23 Thank you very much.

24 THE CHAIRMAN: Mr. Ylonen, you have given us  
25 a brief rundown on some of your concerns and





1   preoccupations.  If you could, and I know you can't  
2   right off the top, but if you could just give us more  
3   explicit references to a few of those statements you  
4   have mentioned it would help us in our tracking them  
5   down.  You probably have them in your records.

6                   MR. YLONEN:  I think that they're all  
7   documented on these sheets here.

8                   THE CHAIRMAN:  On the attached sheets.

9                   MR. YLONEN:  In here, yes.

10                  THE CHAIRMAN:  Fine.  Thank you very much.

11                  MR. YLONEN:  And my information is the news  
12   media.

13                  THE CHAIRMAN:  I just want to make sure that  
14   when we have statements like that we know where they  
15   come from.  It saves us a lot of time later on.

16                  MR. YLONEN:  It's all on the inside.

17                  MR. CHAIRMAN:  Okay.  We'll follow from  
18   there.

19                  Questions for Mr. Ylonen?  Dr. Wilson.

20                  DR. WILSON:  I have two comments or one  
21   question.  Would be it useful, in your view, to ask AECL  
22   to justify the size of repository that they're thinking  
23   about building?

24                  MR. YLONEN:  I don't want to deal with AECL  
25   at all.  I live beside them.  WNRE is right close to me





1 and they're a good neighbor, but it's the URL that  
2 they're developing and how it can be expanded. Also  
3 there's a drawing on the back how the URL could be  
4 expanded to a nuclear waste facility, and my concern is  
5 -nuclear waste coming from other countries.

6 DR. WILSON: Yes, I know. Let me rephrase  
7 the question.

8 Do you think it's a fair question then to  
9 ask, justify the size of the repository which presumably  
10 would have some relationship to the amount of waste that  
11 is expected?

12 MR. YLONEN: When you're underground you can  
13 say that you only require a few square metres to do  
14 anything, but once you're underground the sky's the  
15 limit, if you'll pardon that expression. It can be any  
16 size and it can be developed to any level. It's far  
17 easier to go down, I believe, than it is to go into a  
18 high-rise building because -- well, I'm very concerned  
19 about AECL's activity and burying nuclear waste. I just  
20 don't believe that nuclear waste should be buried. I  
21 believe that they should be kept at their nuclear sites  
22 and then you can monitor them, and when that plant is  
23 decommissioned in 30 or 40 years, it all can stay right  
24 together, and it will be our Egyptian pyramids, so to  
25 speak, for our future generations.







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1 DR. WILSON: Okay. Thank you.

2 MR. YLONEN: Thank you very much.

3 THE CHAIRMAN: Other questions just before --  
4 no?

5 Thank you very much indeed, Mr. Ylonen.

6 ---Mr. Ylonen withdraws

7 THE CHAIRMAN: The next person we would hope  
8 to hear from is Mr. Tom Penner. Is Mr. Penner here? If  
9 not I'll move to the next person on the list, Mr. Brian  
10 Johnston. I think he did speak to the secretariat  
11 earlier so he is here. Good. Thank you.

12 PRESENTATION BY MR. JOHNSON:

13 Thank you very much for your time today.  
14 I'll try to keep my presentation short.

15 No nukes is good nukes, that's what I say,  
16 and millions of Canadians feel that way. FEARO's terms  
17 of reference show industrial preference, while no issues  
18 of relevance may come into play.

19 To have public confidence in this great show  
20 there are quite a few things Canadian must know.  
21 Long-term human health costs? Do profits justify the  
22 lives lost? True cost of production, is it really so  
23 low?

24 I've studied their effects upon our  
25 environment. They suggest this industry's early





1 retirement. Genetic mutation, environmental  
2 degradation, any credible report would address such  
3 content.

4 Uranium transport and reprocessing are  
5 dangerous buffoonery and most distressing. Major spills  
6 in Great Britain, and France likewise smitten, their  
7 absence turns this review into window dressing.

8 And what of Candu's role in nuclear war? Is  
9 that what Candu was really made for? We've made sales  
10 to Pakistan, negotiated with Iraq, but then we gave the  
11 bomb to in India in '74.

12 20 million people were not given the choice.  
13 Industrial corruption bought political voice. Before we  
14 could reject their plan, and declare this nuclear free  
15 land, government stopped our progress with political  
16 toys.

17 But if FEARO expands its terms of reference,  
18 shows that human issues are given preference, examines  
19 the environmental toll, the health, and military role,  
20 then this report may yet earn global deference.

21 Thank you.

22 THE CHAIRMAN: That's the first we've had in  
23 verse form of our presentations. Thank you for that.

24 MR. JOHNSON: My pleasure.

25 THE CHAIRMAN: You wouldn't like to put it to







1 music as well. We might leave that to someone else, but  
2 there may be a question or two.

3 DR. WILSON: Yes. True cost of production is  
4 it really so low, true cost of production will we ever  
5 know?

6 What is involved in the true cost of  
7 production. What do you want to know?

8 MR. JOHNSON: I want to look in terms of what  
9 is the energy cycle and how much energy is actually put  
10 into making a reactor. What comes out. What are the  
11 costs in terms of waste for mining, human health  
12 impacts, environmental degradation, that kind of thing.  
13 So I want the full cost. Not just an answer of it's  
14 cheap electricity for --

15 DR. WILSON: I was hoping you'd say besides  
16 all that kind of stuff. I mean you've named a few  
17 things.

18 MR. JOHNSON: Yeah. I'm not a specialist in  
19 nuclear power, sorry for that. I'm just a simple  
20 citizen in the province.

21 DR. WILSON: So am I. That's why I thought--  
22 but anyway.

23 MR. JOHNSON: Okay.

24 THE CHAIRMAN: Any other questions?

25 If not, thank you very much indeed.





1 MR. JOHNSON: Thank you.

2 ---Mr. Johnson withdraws

3 THE CHAIRMAN: The next person I have listed  
4 is Michelle Forrest is she here? All of these are  
5 people who had expressed an earlier interest, but I  
6 realize that some may not find it possible to be here.

7 Next after Michelle Forrest then is Shelley  
8 Morris to speak on behalf of the Winnipeg Chamber of  
9 Commerce. Is Shelley Morris here?

10 Well, I regret that we were looking forward  
11 to a fairly comprehensive presentation. Yes.

12 MR. COOK: Excuse me, I believe the Chamber  
13 of Commerce are going to be here at 4:30.

14 THE CHAIRMAN: Fine. If you will be here at  
15 4:30 that's fine. We'll handle the speakers and even  
16 allow, if we do well enough a brief coffee or tea break  
17 as well, but the Chamber of Commerce should be here at  
18 about 4:30 you say. Okay. Thank you.

19 Mr. Carl Ridd, I believe wishes to address  
20 the group.

21 MS. TOLLER: Mr. Ridd stepped out for a  
22 minute.

23 THE CHAIRMAN: I'm going to try very hard not  
24 to take this too personally, all these people who said  
25 they wanted to speak to us and now are having second





1 thoughts about it. I hope that that is pure chance.

2 Well, if that's the case, why don't we take a  
3 10 minutes break right now, it's 3:30, and we've had  
4 some fairly concentrated presentations. A 10 minute  
5 break and then we'll come back and hear from the other  
6 people who want to speak to us.

7 ---Recess at 3:30 p.m.

8 ---On resuming at 4:05 p.m.

9 THE CHAIRMAN: Ladies and gentlemen, could I  
10 ask you to resume your places. We will be starting  
11 again in just a moment.

12 The next person I have on the list for this  
13 afternoon is Mr. Carl Ridd. I wonder if he would come  
14 forward and make his presentation from the place of  
15 honour up here. Thank you.

16 PRESENTATION BY DR. RIDD:

17 Thank you very much. I have copies of this  
18 brief, the Panel have them already, and I won't read  
19 every word of it, but will refer to it. I have a few  
20 copies, four or five up here, if press or others would  
21 want them and there are also some at the back table for  
22 interested people, or if we run out of them I can get  
23 more I'm sure.

24 These hearings are unpleasantly similar to  
- 25 the recent Meech Lake process that so alienated







1 Canadians and set us against one another for the  
2 following reasons;

3 These hearings are first of all the current  
4 stage of a process begun in 1977 by politicians and  
5 their chosen experts by the Department of Energy, Mines  
6 and Resources, without public input at that stage.

7 These hearings are governed by terms of  
8 reference so artificially narrow as to exclude the most  
9 important aspects of any serious environmental study,  
10 namely the socio-economic issues raised by the fact that  
11 the public is severely and learnedly critical and  
12 skeptical of nuclear. I'm not saying opposed and  
13 certainly I am not opposed, but critical and to the  
14 extent that a Theologian and reader of literary texts  
15 can be learnedly critical, I am. Having studied  
16 considerably in this area now for some 12 or 15 years.

17 Third, these hearings are in conflict with  
18 their own terms of reference which refers to  
19 socio-economic issues which must be considered, quote  
20 unquote, that's from dialogue fall of 1990, and I say  
21 with a slight tinge of irony in the brief, note the  
22 misnomer of the environmental assessment process  
23 publication itself, dialogue it's called, because the  
24 next point is that these hearings are an example of what  
25 its own literature sent out to us beforehand - it's in





1 my bag. I won't haul it out - are an example of what  
2 its own literature calls tokenism, a substitute for  
3 dialogue. And the document I'm referring to is  
4 Parenteau, called Public Participation in Environmental  
5 Decision-Making, published by FEARO, on pages 7 and 8  
6 where he talks about the Arenstein grid, and this  
7 present EAP process is an example of levels 3, 4 or 5,  
8 which Arenstein and Parenteau rightly call tokenism.  
9 Having lacked the public input early enough in the  
10 process they fall into that category, in the view of  
11 these two sociologists.

12 Finally these hearings are the locus where  
13 relatively unfunded, 152,000 at latest count, \$152,000  
14 out of a maximum \$200,000, most were relatively  
15 unfunded, part-time, mostly non expert citizens  
16 encountering the multi-million dollar budget of AECL and  
17 its array of experts, long-range full-time planners,  
18 dozens of publicists and glossy publications, and of  
19 course -- when I say experts, I say that with great  
20 respect. They are by their whole careers learned in  
21 ways that most of us in this room are not. But I call  
22 attention to the odds.

23 Even the size of the tiny grants of us  
24 citizens, intervenors - and I didn't apply for one and  
25 didn't get one, I chose not to - even the size of the







1 tiny grants of us citizens, intervenors is determined by  
2 the well financed initiators, advocates of deep  
3 geological burial namely AECL.

4 I have other objections to the process but  
5 these are all I will take time for, but I say to the  
6 Panel, by participating in such a flawed process you're  
7 helping to sow the wind and Canada will reap the  
8 whirlwind.

9 If you thought Meech and Oka created  
10 difficult moments for Canada, wait until the larger  
11 process in which you are now playing this assigned,  
12 deliberately small, artificially small, part reaches the  
13 stage of site specific debate. Reaches that stage with  
14 all the urgent, prior, fundamental questions of  
15 Canadians unanswered and unaddressed. Wait until you  
16 try to put it in someone's backyard.

17 So that's the first part. That's the  
18 introduction.

19 My complaint about -- and not a complaint  
20 against these people who are here, you know, honourably  
21 doing their best in a process which I declare to be  
22 flawed in ways that I have intimated and will further  
23 set out now.

24 The second part then I've called widening the  
25 scope within the too narrow scope. That is, how can we,





1 and I mean everyone in this room, which ever side of  
2 this debate we're on, I feel we need to widen the scope  
3 of the process here and to try to use the terms of  
4 reference given and open them as wide as they possibly  
5 can be opened, in order that we not go along in this  
6 tight little process which at the end, like Meech Lake,  
7 just blew up.

8 So this is widening the scope within the too  
9 narrow scope, or how to use a flawed process, I call it.  
10 Namely, issues addressed by the environmental impact  
11 statement, which AECL is to draft subsequent to these  
12 scoping hearings, issues that we might ask them, that  
13 the Panel might ask them to address, which will  
14 significantly broaden the scope of the overall process,  
15 yet will remain arguably within the terms of reference  
16 of this EAP, which says that socio-economic issues must  
17 be considered.

18 So now I'm setting out issues which I think  
19 are part of the environmental issue, particularly the  
20 socio-economic part, and particularly within that, the  
21 social aspect of the social economic issues which must  
22 be considered, as Dialogue issue 2, page 2 in its  
23 headline said.

24 The first issue that I think the EIS needs to  
25 address is the discussion of the fact discerned in all





1 our learned disciplines from religion and social  
2 sociology and historiography to physics and chemistry  
3 and biology, that there is no such thing as the  
4 environment.

5 The environment is at any and all times an  
6 act of human imagination, finally, and may not be  
7 examined with any accuracy apart from the sources of  
8 that imagination in its various socio-political  
9 contexts, biases, assumptions and so on, all of which  
10 are presently undergoing profound change.

11 In other words, the environment, as we speak  
12 of it, seriously and scientifically considered, is  
13 human, even in its natural aspects. See the point I'm  
14 trying to make? I mean the ecologists make it in terms  
15 of the deep ecology kind of thing, or in terms of a kind  
16 of symbiosis, but whether in physics or in these other  
17 disciplines, we're learning the degree to which we are  
18 all part of some sort of system here, and it's not us  
19 here, and the environment or nature over there. That  
20 was the illusion that in and around the 17th Century we  
21 managed to generate in western civilization. Subject  
22 object split it's called in philosophical, theological,  
23 historical language. And it isn't true, and we're  
24 discovering it isn't true in all sorts of ways. That  
25 the environment is itself a cultural construct. The







1 native people see a different thing than Manitoba Hydro,  
2 or than a white engineer, male middle class university  
3 graduate would see. I think that's a very big issue the  
4 environmental impact statement has got to address. You  
5 know, what is this thing which is really not a thing  
6 called the environment.

7 Secondly, I think the statement needs some  
8 discussion of the fact of the immense public distrust of  
9 the nuclear industry, much of it earned by the perceived  
10 self-interest, easy assurances, flawed safety record,  
11 unanticipated problems, secrecy and so on of the  
12 industry and of its political masters.

13 Now there needs to be a discussion of a  
14 legitimate process, not simply education which is  
15 perceived to us public as propaganda, a legitimate  
16 process for dealing honestly with this fact.

17 Again I'm not saying that these people who  
18 make these statements are liars or trying to mislead the  
19 people from within their own perception. They speak the  
20 truth. They seek to at any rate. I'm simply saying  
21 that again and again assurances that were easily and  
22 prematurely given have proved to be unsubstantiable, and  
23 that there are always surprises in modern civilization,  
24 whether it's the coming down of the Berlin Wall or  
25 invasion of Kuwait or Chernobyl.





1 Third, there needs to be a discussion of  
2 alternatives to further dependency on the nuclear  
3 option. Especially the alternative of least cost energy  
4 supply. Now that's a jargon word. I was for a time,  
5 for about five, four years, Chair of the Manitoba Energy  
6 Council, which was an advisory body to the provincial  
7 government, and through people like a man name Ralph  
8 Kovana (phonetic), Amory Lovins (phonetic) and others,  
9 there is an instrument already functioning which  
10 involves massive energy conservation which is achieved  
11 by the controlling of demand rather than by always  
12 trying to increase the supply according to the current  
13 technologies that we function.

14 I simply can't in this brief brief go on with  
15 that, but interestingly I and some others just made a  
16 presentation to some members of the Manitoba legislature  
17 this morning on that issue.

18 Anyway, there needs to be discussion of  
19 alternatives to further dependency on the nuclear  
20 option. Not to say that we need never go nuclear or  
21 that it's a bad thing or anything, but just that it's  
22 something like Conowapa, which needs to be delayed as  
23 long as possible, and if then it's necessary, then it's  
24 necessary. And this needs to be discussed, these  
25 alternatives, for part of the human environment which







1 will impact and be impacted by further forays into the  
2 nuclear option, is the public's deep sense that real  
3 alternatives have not seriously been sought or tried.  
4 That a dangerous technology is being prematurely rammed  
5 down our throats.

6 Again I want to say, I am not saying that  
7 it's dangerous and we shouldn't do it. I'm saying the  
8 most convinced expert in favour of the nuclear option  
9 realizes the danger of it, and is spending her or his  
10 whole effort trying to mitigate that danger or avoid it.  
11 But we all agree in this room that it is a dangerous  
12 technology.

13 If we forego, in Canada, for example, the  
14 further construction of nuclear plants, then the present  
15 methods of temporary storage can be greatly prolonged  
16 thus giving time for more research, for example, on  
17 permanent disposal, and the Ontario decision, in its  
18 budget of yesterday, is perhaps one such moratorium. If  
19 there is a further one in Canada, then we can perhaps  
20 handle our wastes in this relatively benign fashion for  
21 an indeterminate period, and I think the EIS needs to  
22 deal with that.

23 We need to discuss the morality of continuing  
24 to build nuclear plants before the issue of waste  
25 disposal is solved. That is the morality of assigning a





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1 possibly insoluble problem to future generations and to  
2 the ecosphere.

3 Fifth, we need a discussion of - and I hope  
4 there's somehow room for this in the EIS forthcoming - a  
5 discussion of how this EAP's review, scheduled to be  
6 completed, as I understand, by 1995, the Panel, can be  
7 sold to the Canadian public as a responsible review when  
8 one of the sources of its evidence and conclusions,  
9 namely AECL's research on burial in igneous rock is not  
10 schedule to be concluded until the year 2,000. I don't  
11 understand that.

12 Six, there needs to be a discussion of how  
13 this review of the concept of burial of waste in  
14 geological formations of igneous rock can possibly be  
15 sold to the Canadian public when the more they learn  
16 about waste disposal the more they understand that it  
17 can only, properly, finally be site specific, and that  
18 the American method, which is site specific, while  
19 painful, and might be politically extraordinarily  
20 difficult at the moment as we all know, is at least  
21 honest on this fundamental point, while the Canadian  
22 method, more politically expedient for the moment, the  
23 concept of deep geological burial, gives longer life and  
24 perhaps unstoppable momentum to a solution that may  
25 prove invalid, but which may be employed anyway by then







1 because we've gone so far.

2 Seven, discussion of why the AECL, EIS,  
3 environmental impact statement, should be found credible  
4 by the public - and remember the public is the human  
5 poll of the environment. The public is that thing in  
6 relation to the environment - it should be found  
7 credible by the human environment, I'll say, given  
8 AECL's public record of a too uncritical advocacy and  
9 intimidation of dissenters.

10 Again I want to reiterate my respect for the  
11 people who work in AECL and who support them, but I gave  
12 much thought to whether I would utter that line that  
13 I've just uttered about intimidation of dissenters. I  
14 gave much thought, for example, as to how, and even  
15 whether I could come before this Panel and truly express  
16 my mind to you, for what if, by an inadvertent phrase or  
17 on a point where I am sincerely ignorant, and let us say  
18 wrong, I expose myself to the threats of a lawsuit from  
19 this multi-million dollar corporation with its battery  
20 of lawyers and citizen watchers. Do I have the right to  
21 expose my family to financial ruin just because I play  
22 the part of a citizen and sincerely speak, and I've  
23 received such a letter from AECL. This is not  
24 hypothesis. I've received such a letter before, and I  
25 know how it tends to silence one, and I know others







1 who've been even more frighteningly approached.

2 THE CHAIRMAN: Mr. Ridd, excuse me, I just  
3 remind you that you have had the floor for the 15  
4 minutes, so perhaps you could --

5 MR. RIDD: I will conclude very swiftly now.

6 And I leave other issues to one side, I then  
7 say, and finally I have a number of questions which can  
8 come quite quickly.

9 I call the third section here keeping the too  
10 narrow scope too narrow, or trying to mitigate the  
11 whirlwind to come. That is issues to be addressed by  
12 the EIS within the terms of reference as the authors of  
13 those terms of reference probably intended them.

14 My second section is trying to explode those  
15 terms of reference more widely, but this section is okay  
16 if -- you know, if we get beaten down on that, then  
17 first why is there water down the shaft of the URL at  
18 Pinawa when there's not supposed to be if migration is  
19 to be prevented?

20 Second, accepting that igneous rock has been  
21 stable for thousands of years, how do we know that the  
22 emplacement will not disturb it?

23 Third, supposing, against all expectation,  
24 that problems of migration of radioactive material show  
25 up after the site is filled and sealed, how would the





1 problem be handled? Is the waste retrievable?

2 Fourth, this is an important one to me, how  
3 will the criteria for site selection be developed and  
4 what tentative description of their content, the  
5 criteria for site selection may now be given? This is  
6 not, as the Panel or AECL or others may now argue, a  
7 future question outside the scope of these hearings. It  
8 is, on the contrary, an environmental impact question of  
9 the present moment. For the public, can it evaluate  
10 concept in the abstract apart from the question of how  
11 later their input into site may be foreclosed or  
12 inhibited. If we don't know what the criteria for site  
13 selection is going to be, then we don't even want to  
14 discuss concept perhaps, or it would make a difference  
15 to the way in which we discuss it if we knew what the  
16 criteria for site selection were going to be.

17 Fifth, why does Canada presently limit the  
18 liability for any one nuclear disaster to the  
19 arbitrarily minuscule sum of 75 million when the  
20 estimated cost, according to the WASH-740 study of  
21 several years ago, was then put at a level as high as 77  
22 billion, and I believe Chernobyl is turning out higher  
23 than that, and I know of course that we have a different  
24 reactor here in Canada, a better one than the Russians  
25 do.







1                   Would pollution emanating unpredictably from  
2 deep geological waste disposal be categorized as a  
3 disaster, and would it be subject to the same limitation  
4 of liability, a mere 75 million?

5                   Finally, why are the deliberations of this  
6 Panel to remain confidential with only the conclusions  
7 reached by it to be available to the public? This will  
8 mean, among other things, that dissent and minority  
9 opinions generated on a Panel that by the end will be  
10 far more learned than ordinary Canadians will not be  
11 available to us ordinary Canadians.

12                  Even if the Panel's judgment is that the EIS  
13 is inadequate at some point presumably it will be found  
14 adequate, and we will be ushered into the public  
15 hearings phase of this process without the public  
16 knowing what serious informed dissent from within the  
17 Panel has been withheld from the public. The EIS must  
18 indicate what impact, knowing there has been suppressed  
19 dissent is likely to have on the Canadian social  
20 environment.

21                  Thank you.

22                  THE CHAIRMAN: Thank you, Mr. Ridd.

23                  Are there questions which we would like to  
24 put to Mr. Ridd on the basis of his presentation this  
25 afternoon? Dr. Wilson.





1 DR. WILSON: I have two. The first, on page  
2 2, under point 3 where you in brackets have said, "If we  
3 forego, for example the further construction of nuclear  
4 plants, the present methods of temporary storage can be  
5 greatly prolonged, thus giving time for more research on  
6 permanent disposal."

7 We've heard from a number of groups across  
8 the country their hope that the present methods of  
9 temporary storage can be greatly prolonged whether or  
10 not there's further construction of nuclear plants. I  
11 mean there isn't a question of what's the hurry. Is  
12 this the question you're raising here? Am I  
13 understanding that properly?

14 DR. RIDD: Yes, it is. I don't know just how  
15 many years we can go on in our present method, but I  
16 believe a fairly long time, and I'm saying if there is  
17 no more nuclear plant construction then we can go on  
18 even longer.

19 DR. WILSON: Okay.

20 And the second one about -- on page 4, under  
21 point 4, "how will the criteria for site selection be  
22 developed?" I mean, in fact, this Panel has been  
23 charged with looking at not only the safety of the  
24 concept but the criteria for the acceptability for site  
25 selection. I mean you raise the question here. Do you





1 have any ways to help us here or suggestions of people  
2 we might consult who would be useful to the Panel?

3 MR. RIDD: Well, the person from whom I've  
4 learned a lot, it was first through his books, is Walt  
5 Patterson, Walter Patterson, who is in England - I don't  
6 have his address with me - but he is the person who did  
7 the B.B.C. commentary on the Chernobyl event. He is a  
8 physicist who is a Winnipegger should be happy, he went  
9 to public school at River Heights Junior High School in  
10 River Heights. My father was in fact the principal of  
11 that school when this little sucker went through, and  
12 then he went on to Kelvin and then to University of  
13 Manitoba, and is now living in England, but his parents  
14 live, I believe, still on Oak Street. His father is a  
15 lawyer, and Walt is the first person I would turn to,  
16 and I think I'll end it there because I'm not a  
17 physicist and I don't know, you know, what other -- but  
18 this book that was published - I don't have -- I have it  
19 here in my bag - but challenges to nuclear waste, the  
20 big conference that was put on here by - I forget the  
21 exact auspices of it, but Anne Wieser edited it and  
22 you've probably seen it. I could wave it about - there  
23 were several experts who presented there. They were  
24 brought from -- they were international people and  
25 brought from there so if you get a copy of the book







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1 you'll get a list of several.

2 DR. WILSON: Just to say that if you have  
3 any, you know, more specific information we'd be glad to  
4 receive it in writing, and I was afraid for a while you  
5 going to give a PR thing for River Heights School there,  
6 which would make us most suspicious.

7 DR. RIDD: But of course I didn't give the PR  
8 thing, right?

9 THE CHAIRMAN: Any other questions for Mr.  
10 Ridd?

11 Thank you very much indeed, sir, for  
12 appearing here this afternoon.

13 DR. RIDD: Thank you.

14 ---Dr. Ridd withdraws

15 THE CHAIRMAN: Could I call next please on  
16 the Winnipeg Chamber of Commerce. I understand that Mr.  
17 Brownstone will be introducing the other members of his  
18 group who are here to speak to us this afternoon.

19 PRESENTATION BY MR. BROWNSTONE:

20 Thank you, Mr. Chairman, members of the  
21 Panel. My name is Buddy Brownstone, I'm the President  
22 of the Winnipeg Chamber of Commerce. The Chamber  
23 represents the interests of the Winnipeg business  
24 community speaking on behalf of 1,700 organizations  
25 and almost 5,000 individual representatives.





1                   We are pleased to have this opportunity to  
2 participate in these scoping meetings.

3                   Our position will be presented by Mr. Alan  
4 Cantor, who is the Chairman of our Environmental  
5 Sustainable Development Committee. Also in attendance  
6 and prepared to answer questions you may have is Mr.  
7 Rick Cook, Chairman of our waste management  
8 subcommittee. Mr. Cantor.

9 PRESENTATION BY MR. CANTOR:

10                  Mr. Chairman, the Winnipeg Chamber of  
11 Commerce wishes to go on record as supporting the public  
12 review of technological options available for the safe  
13 and reliable management of waste materials produced as a  
14 result of nuclear power generation and other  
15 applications of nuclear technology. In doing so, we  
16 support the holding of public hearings on the subject as  
17 committed to by the Federal Minister of Environment  
18 through the federal environment assessment review  
19 process.

20                  In making this representation, the Chamber is  
21 not taking any position for or against the continued or  
22 expanded use of nuclear technology or its application as  
23 an energy source. However, we believe that such  
24 judgment requires that the associated waste management  
25 issue be addressed. For this reason we recommend that







1 the scope of the subject public hearings be directed at  
2 thoroughly evaluating all technical, environmental and  
3 social aspects of the issue, such that an informed  
4 judgment respecting the technologies available can be  
5 made.

6 In the context of the above neutral position  
7 respecting nuclear energy generally, and any waste  
8 management technologies in particular, the Chamber also  
9 wishes to state its support for the continuation of the  
10 research and development work conducted by Atomic Energy  
11 of Canada at the Whiteshell Nuclear Research  
12 Establishment at Pinawa. We recognize the value of a  
13 world class research capability being available to  
14 Canadians in developing, evaluating and implementing  
15 appropriate technical solutions in this area and  
16 furthermore, recognize its importance to the province in  
17 providing local high technology resources.

18 The basis of the Chamber's position on this  
19 matter, as stated above, is the recognition that a need  
20 for economic sources of energy be based on the  
21 principles of sustainable development. As such, the  
22 Chamber acknowledges the following points in approaching  
23 the question of selecting sources of energy.

24 One, the first priority associated with the  
25 development of energy supplies should be conservation of





1 existing developed sources through application of energy  
2 saving technologies to reduce demand.

3           Second, the desirability of moving toward the  
4 increased utilization of passive renewable energy  
5 sources such as wind and solar is acknowledged as being  
6 desirable in the long-term, but will be technologically  
7 and economically limited in the near and medium term.

8           Three, the continued development of non  
9 renewable energy sources, notably fossil fuels, is  
10 politically vulnerable and generally inconsistent with  
11 achieving sustainable development in either  
12 environmental or economic terms.

13           Four, further exploitation of hydro-electric  
14 power sources, while preferable to fossil fuel, is  
15 recognized as having limited availability in Canada and  
16 should only be pursued taking full account of the  
17 environmental and social costs associated with that  
18 development.

19           Fifth, nuclear power generation represents a  
20 major source of Canada's energy supply currently, and  
21 conditioned on it being demonstrated as being  
22 technically secure, could provide an option as a future  
23 source of additional supply, including minimal  
24 environmental and social impacts provided that safe,  
25 efficient, and reliable methods are available for the







1 management of waste by-products associated with its use.

2 In summary, the Chamber's looking to the  
3 Nuclear Waste Fuel Environment Assessment Panel and the  
4 public hearing process that it is undertaking to make  
5 the necessary determinations respecting the availability  
6 of the appropriate technology for nuclear waste  
7 management.

8 We believe that a determination is a  
9 prerequisite -- that such a determination is a  
10 prerequisite for the continued consideration of nuclear  
11 power generation as an energy source option for  
12 Canadians.

13 That is our submission.

14 THE CHAIRMAN: Thank you very much.

15 Are there questions which my colleagues would  
16 like to put to the Chamber of Commerce following from  
17 that brief presentation? Dr. LaPierre.

18 DR. LAPIERRE: In your opening statement or  
19 paragraph, you indicate that we should look at reliable  
20 management of waste material. I wonder if you have --  
21 if in that -- if the word management versus disposal  
22 means that there should be a continuous monitoring or  
23 management through time of the waste rather than  
24 disposal and forgetting about it?

25 MR. CANTOR: With respect, I don't know that







1 there's a distinction. Management or disposal, it's all  
2 part of the same situation is it not?

3 DR. LAPIERRE: Well, I guess to me management  
4 implies that you're going to manage through time and  
5 disposal would mean that you would bury it and forget  
6 about it and that's why I -- the concept is for deep  
7 burial, and I would like to know if the word management  
8 was chosen deliberately rather than disposal.

9 MR. BROWNSTONE: Our Mr. Cook might have a  
10 comment on that.

11 MR. COOK: I think, yes, the word management  
12 was deliberately chosen, and I think the differentiation  
13 that you made is correct and perhaps it's the ethic  
14 related to waste management generally, without respect  
15 to any specific waste management problem. But the  
16 approach being one of custody, and perpetual care being  
17 appropriate to waste management issues generally, and I  
18 think that logic should certainly be extended to this  
19 issue.

20 DR. LAPIERRE: Thank you.

21 THE CHAIRMAN: Are there other questions for  
22 the Chamber of Commerce?

23 Dr. Wilson.

24 DR. WILSON: On page 2, point 5, you make the  
25 point that nuclear energy represents a major source of





1 Canada's energy supply currently, and condition on it  
2 being demonstrated as being technically secure then it  
3 could provide so and so.

4 We've heard a number of interventions by the  
5 native people of Canada who would have additional  
6 criteria to being technically secure only, and I'm  
7 wondering if -- why you put only the technical security  
8 or do you have other criteria that we should look at in  
9 terms of the cross-section of Canadian public that will  
10 be affected?

11 MR. CANTOR: Well, the major -- there are  
12 two -- as we see it there are two criticisms of nuclear  
13 production of energy. One is the Chernobyl disaster  
14 scenario. That there is a risk that there will be some  
15 disaster resulting in all kinds of damage, and when we  
16 say technically secure, we are implying that the  
17 production of nuclear energy should be safe, okay?

18 The other aspect that we see as a problem is  
19 the disposal of the waste, and that's what your Panel is  
20 trying to determine. So we say, we really -- we see  
21 nuclear energy as a valuable source provided there can  
22 be some certainty that it won't be a risk in its  
23 production and the waste can be safely disposed of. It  
24 does represent, from an environmental aspect, I think,  
25 considerably better than hydro electric, fossil fuel.







1 Does that answer your question?

2 DR. WILSON: You heard the previous -- the  
3 intervention of the natives here? Were you here for  
4 that this afternoon?

5 MR. CANTOR: No, no, I was not. I'm sorry.

6 DR. WILSON: That is fine then.

7 THE CHAIRMAN: Other questions?

8 If not, thank you very much indeed,  
9 gentlemen, for coming and letting us have your views on  
10 the quite difficult question we're trying to address.

11 MR. BROWNSTONE: Thank you for permitting us  
12 to appear.

13 --- Panel withdraws

14 THE CHAIRMAN: I understand, I hope that I'm  
15 correct in this, that Ms. Cathy Sky is now here, and if  
16 so if she would like to come forward to make a  
17 presentation on behalf of Grand Council Treaty #3.

18 If you press the little button to make sure  
19 you're picked up on the mike. Thank you. And if you  
20 can speak fairly directly into the microphone than its  
21 easier for the people that are making the permanent  
22 report. Thanks very much.

23 PRESENTATION BY CHIEF SKY:

24 Good afternoon, my name the Cathy Sky and I'm  
25 the area Tribal Chief for the Dryden area for Grand





1 Council Treaty #3, which is an organization of 25  
2 Ojibway First Nations in Northwestern Ontario.

3 Treaty #3 encompasses 55,000 square miles in  
4 Northwestern Ontario, which is around the Dryden,  
5 Kenora, Fort Frances area.

6 At this time we do not know which of these  
7 communities lie within the Canadian Shield or more  
8 specifically within the types of rock formations where  
9 AECL proposes its concept for nuclear waste disposal.

10 However, even if such a disposal facility  
11 were not sited within our territory, we could be  
12 impacted because of travel through, or close to our  
13 communities. Therefore, we are very concerned with the  
14 proposed concept and we are also concerned with the  
15 whole concept of choosing nuclear power as an option for  
16 production of energy.

17 The people in Grand Council Treaty #3 live,  
18 and have lived on the land for a very long time and we  
19 have practiced, and continue to practice our traditional  
20 activities including hunting, trapping and fishing.

21 Over time we have seen many of our  
22 traditional activities harmed by the activities of white  
23 people, both private individuals and government, who  
24 come onto our land and flood our reserves, cut down our  
25 trees—and cause other impacts, the extent of which we do





1 not know. All of these activities together create  
2 impacts that are generally overlooked when a new  
3 activity is planned which will affect our territory.  
4 The AECL concept for nuclear waste disposal is yet  
5 another one of these proposed activities that will  
6 affect us.

7 We are very concerned about the safety and  
8 reliability of such a facility. We are also very  
9 concerned that this Panel seems unwilling to give  
10 consideration to the fact that waste disposal and the  
11 activity that gives rise to the waste, in this case  
12 nuclear power generation, ought to be considered  
13 together. Ontario Hydro does not seem willing to  
14 consider this, nor does this Panel.

15 We would sincerely urge this Panel to give  
16 consideration to the whole question of the entire costs  
17 of nuclear power generation including disposal.

18 As well we are concerned that once again  
19 native communities may be asked to bear the risks so  
20 that Southern Ontario and the northern United States may  
21 reap the benefits.

22 We therefore submit that this Panel should  
23 require AECL to deal with a number of matters in its  
24 environmental impact statement. We also believe that  
25 this Panel must be guided by these same considerations.







1                   This proposal, if it is implemented,  
2                   definitely affects aboriginal people. It would be  
3                   unjust and unfair and perhaps even illegal, given the  
4                   fact that Canada has a fiduciary obligation to  
5                   aboriginal peoples, to not have an aboriginal person  
6                   sitting on this Panel. Even from a practical point of  
7                   view, such a person could provide background and  
8                   understanding to other members of the Panel.

9                   In order to do any of the work that we  
10                  believe AECL must do in order to do a proper  
11                  environmental impact analysis, it must consult with our  
12                  communities and this consultation cannot be done without  
13                  working together with the communities. Not only must  
14                  AECL consult with the communities, but this Panel should  
15                  visit the communities that would be impacted.

16                 At this point we are not in a position to say  
17                 which community would be best to be visited. However,  
18                 we believe that this should be done as soon as possible.  
19                 That it was not done already is problem enough.

20                 We also believe that people from our  
21                 communities should be consulted by AECL and be provided  
22                 with sufficient funding to critically assist in doing an  
23                 environmental impact analysis.

24                 Safety and acceptability for aboriginal  
25                 people must be specifically considered. We also believe





1 that this Panel must ask itself whether consent of any  
2 affected aboriginal people to this very concept would be  
3 required as a result of the exercise of our treaty and  
4 aboriginal rights.

5 This Panel should also consider whether or  
6 not it is unfair to place the burden of risk on  
7 aboriginal people, especially as they do not share  
8 equally in the benefits of electricity that is produced  
9 through nuclear fuel.

10 We make the same point with respect to the  
11 terms of reference. It appears that the only future  
12 generations that will be burdened by AECL concepts are our  
13 people, and the acceptability of this burden to our  
14 people has to be fairly assessed.

15 We believe that a detailed impact analysis  
16 describing the potential effects on our communities in  
17 terms of our health, our economies, the wildlife and  
18 plants that we use in our culture must be considered.  
19 We do not believe that these kind of considerations can  
20 be left until after the concept is approved. For then  
21 we will be left only with the possibility of mitigating  
22 impacts.

23 As well, we insist AECL be required to  
24 consider this concept not in isolation, but together  
25 with all the other impacts of the other developments







1 that have affected Grand Council Treaty #3 communities.

2 We emphasize that this Panel should not  
3 consider the development of criteria for siting such a  
4 concept to be sufficient to deal with the concerns about  
5 the concept. This Panel must decide whether the concept  
6 is acceptable. Nonetheless, we are also concerned that  
7 if this concept does get approved we must protect our  
8 communities as far as possible.

9 Therefore, we believe that this Panel must  
10 consider the following; extent of aboriginal land use,  
11 including traditional and economic development uses,  
12 compensation, establishing buffer areas around  
13 potentially affected communities of Grand Council Treaty  
14 #3, effect of aboriginal treaty rights on siting of this  
15 facility, effect of the site on existing and potential  
16 land claims.

17 The risks to our people of accidents on the  
18 highway that would affect our people while they are on  
19 the road, as well as the potential for disaster to our  
20 people who live in the area, in the event of an  
21 accident, must be carefully considered.

22 We also believe that a number of other issues  
23 should be considered by this Panel and also by AECL in  
24 the preparation of this environmental impact statement.

25 What are the alternatives to the disposal





1 option? What real consideration has been given to  
2 continuing the storage of nuclear fuel wastes at reactor  
3 sites, or to disposing of wastes at some other location?  
4 What emergency response planning has AECL done? What is  
5 the real cost of this option, and how should that be  
6 reflected in the cost of electricity generated by  
7 nuclear generating stations? It is intended, or is it  
8 even possible that this facility will become a dumping  
9 ground for nuclear wastes of other countries? Can  
10 compensation of First Nations ever properly and fairly  
11 compensate them for the continued risks of such a  
12 nuclear waste disposal site, and must there be  
13 continuing compensation?

14 The concerns of our people are real and  
15 cannot be ignored.

16 At this time this is an oral presentation, we  
17 will be submitting a more detailed written submission.

18 THE CHAIRMAN: Well, thank you very much for  
19 making an oral presentation and we look forward very  
20 much to receiving what I think you describe as a  
21 somewhat expanded written presentation.

22 As I mentioned earlier on, we'll treat  
23 written and oral presentations with the same weight. We  
24 look forward to receiving that as well to supplement  
25 what you've said today.





1 Can I ask if there are any questions which  
2 members of the Panel would like to put to Chief Sky  
3 while she's here? Mr. Van Vliet.

4 MR. VAN VLIET: The earlier presentation we  
5 had from Chief Fox indicated that the lands that are  
6 covered by Treaty #9 covers something like two thirds of  
7 Ontario, and you are making a statement here that 65,000  
8 square miles of Ontario are being covered by Treaty #3.

9 CHIEF SKY: No, I said 55,000 square miles.

10 MR. VAN VLIET: Fifty- five. What is left of  
11 Ontario? I don't know. I don't think any place is left  
12 that would fall outside of these territories?

13 CHIEF SKY: Oh, I'm sure there are parts of  
14 Ontario left, but like I said, there are existing land  
15 claims which not been settled.

16 MR. VAN VLIET: So you're including  
17 nonsettled land claims in these numbers?

18 CHIEF SKY: Yes.

19 MR. VAN VLIET: Thank you.

20 THE CHAIRMAN: Any other points on which we  
21 would like clarification?

22 If not, thank you very much indeed for  
23 appearing and we look forward to receiving your written  
24 presentation as well.

25 CHIEF SKY: Okay. Thank you for hearing me.







1                   THE CHAIRMAN: Thanks very much.

2       ---Chief Sky withdraws

3                   THE CHAIRMAN: Now, there were one or two  
4 other people who were on our list, but were not present  
5 at an earlier hour. I'm wondering if either Mr. Tom  
6 Penner or Ms. Michelle Forrest have appeared this  
7 afternoon, so I would ask them to come forward now. If  
8 not, it's possible that they will come to our evening  
9 session.

10                  If there is no one else who would like to  
11 address the afternoon session I shall bring it to a  
12 close with just a couple of remarks.

13                  One has to do with the timing of our work,  
14 and I must say at the coffee break some of the  
15 participants, in particular the media, I was being  
16 pressed a little bit to say when we were going to get  
17 what things done. I was being deliberately noncommittal  
18 in that regard and I have said that it would probably  
19 take us several more months to get our guidelines for  
20 AECL completed, and the reason I'm not pinning it down  
21 is that I think it's far more important that we have  
22 those guidelines complete and right than we get them  
23 done by an artificially set date. I hope some time in  
24 March or April or thereabouts we'll be able to complete  
25 our work and give the guidelines to AECL, but I don't





1 intend to be held to that if it's to the jeopardy of  
2 the quality of what we're doing.

3 Similarly, and I ought not to be saying this  
4 at all, how long will AECL take? Well, I've hazarded a  
5 guess of a year, a year and a half or two years for them  
6 to prepare their environmental impact statement.

7 So far as I, and all the members of this  
8 Panel, I believe, are concerned, the most important  
9 thing is that it be a comprehensive and complete  
10 environmental impact statement which adequately answers  
11 all the questions we have put to them. That is far more  
12 important than having it by a specific date.

13 We have by no means tried to set any deadline  
14 as to when AECL must have its work completed. Once  
15 again it's the quality and the comprehensiveness of that  
16 work that we are looking for, not a precise date, which  
17 I certainly would not undertake to give now. We are not  
18 imposing time limits on that.

19 I thought I should just make that clear  
20 because of perhaps some misunderstanding on the part of  
21 some of the members of those present and the press on  
22 the point of our timing.

23 From that I really want to thank you all for  
24 being present, and particularly those who have  
25 participated and made presentations to us this







1 afternoon. We have listened carefully. We will be  
2 rereading your written statements where there have been  
3 written statements and I know all of them will be  
4 extremely helpful to us as we pursue our work.

5 This session is now adjourned. We will be  
6 continuing again this evening in the same place, at 7  
7 o'clock and there are a number of people who will be  
8 making presentations to us. We look forward to that  
9 next session.

10 Thank you very much indeed.

11 ---Recess at 4:45 p.m.

12 ---On resuming at 7:00 p.m.

13 THE CHAIRMAN: Good evening, ladies and  
14 gentlemen. If you'd be so kind as to take your places  
15 we'll start this evening's scoping session of the  
16 Environmental Assessment Panel, which has been charged  
17 with reviewing the nuclear fuel waste management and  
18 disposal concept.

19 The members of the Panel, I'd like to  
20 introduce just before we get started. At the far left  
21 end of the table, Mr. Pieter Van Vliet of Regina, a  
22 mechanical engineer, who is on the Senate of the  
23 University of Regina. The missing chair will be filled  
24 momentarily by Dr. Lois Wilson of Toronto, well-known to  
25 a lot of people here in Winnipeg, I think. Currently





1 present the President of the World Council of Churches  
2 and Co-Director of the Ecumenical Forum of Canada. To  
3 my immediate left, Dr. Louis LaPierre, of Moncton, a  
4 professor in the Department of Biology at the University  
5 of Moncton and Chairman of the Environmental Council of  
6 New Brunswick. To my immediate right, Ms. Louise Roy,  
7 an environmental and public affairs consultant from  
8 Montreal. Ms. Roy is former vice-president of the  
9 Quebec Public Hearing Board on the Environment and is  
10 currently a member of the Canadian Environmental  
11 Research Council. And at the far end of the table, Dr.  
12 Lionel Reese, from London, Ontario, a physician at St.  
13 Joseph's Hospital in that city and a professor in the  
14 Department of Diagnostic Radiology and Nuclear Medicine  
15 at the University of Western Ontario. My name is Blair  
16 Seaborn and I'm Chairman of the Panel. I live in  
17 Ottawa. I'm retired but I served previously as Deputy  
18 Minister of the Environment and Canadian Chairman of the  
19 International Joint Commission.

20 Members of the Secretariat who are here this  
21 evening, Mr. Bob Greyell, at the table over here, who is  
22 our executive secretary, and to the back of the hall,  
23 Ms. Susan Flanagan and Ms. Susan Toller.

24 The review is being conducted in accordance  
25 with the Federal Environmental Assessment Review





1 Process, EARP.

2 We have been asked, in part, to examine the  
3 nuclear fuel waste management and disposal concept, a  
4 proposal from AECL for the permanent disposal of used  
5 nuclear fuel deep in the granitic rock of the Canadian  
6 Shield.

7 I'd like to say a few words about the Panel's  
8 mandate. The terms of reference state that the Panel is  
9 to review the safety and acceptability of the AECL  
10 concept for geological disposal of nuclear fuel waste,  
11 and in addition to the AECL proposal we shall examine a  
12 broad range of nuclear fuel waste management issues  
13 including long-term management, transport and  
14 environmental, social and economic effects.

15 We shall look at approaches to nuclear fuel  
16 waste management and disposal being developed elsewhere  
17 in the world. Since site collection will not occur  
18 until a disposal concept has been accepted as safe, the  
19 Panel will not consider any specific sites, but it will  
20 review the potential availability of sites and a  
21 methodology and the criteria required for their  
22 selection. I'd like to say a word or two also about  
23 what is not in the Panel's mandate and will not be  
24 addressed in this review.

25 The energy policies of Canada and the







1 provinces. The role of nuclear energy within these  
2 policies, including the construction, operation and  
3 safety of new or existing nuclear power plants. Fuel  
4 reprocessing as an energy policy, and military  
5 applications of nuclear technology.

6 I would like to make it quite clear, however,  
7 that the members of the Panel are very much aware of the  
8 broader concerns related to the use of nuclear materials  
9 and the use of nuclear power for the generation of  
10 electricity. We have been urging a broader review of  
11 the comparative environmental implications of the  
12 various methods of generating electricity, and I am  
13 pleased to be able to say that that review seems to be  
14 on the point of being launched in the, I hope, not too  
15 distant future. Letters have gone out from the Federal  
16 Department of Energy to Provincial Ministries of  
17 Environment and Energy and to a significant number of  
18 environmental and energy interest groups asking for  
19 their comments on proposed terms of reference for such a  
20 study. With a request that the comments on them come  
21 back quickly. I hope that we shall soon see the launch  
22 of that broader study which will help to put our work  
23 into context.

24 The purpose of scoping meetings is to allow  
25 participants to identify issues that need to be





1 addressed in the environmental impact statement that  
2 will be prepared by AECL. The Panel is not requesting  
3 the presentation of opinions on the substance of the  
4 disposal concept at this time. Public hearings will be  
5 held later to discuss whether AECL's proposal is  
6 acceptable.

7           Following this series of meetings the Panel  
8 will prepare draft guidelines for the preparation of the  
9 environmental impact statement. We'll invite public  
10 comments on those drafts over a period of at least 30  
11 days. When they have been put in final form they'll be  
12 issued to AECL which will then proceed to prepare its  
13 environmental impact statement, a process which will  
14 probably take a year, a year and a half, possibly as  
15 much as two years, depending upon the complexity and the  
16 need for completeness of that environmental impact  
17 statement.

18           Once we are satisfied that the AECL has  
19 addressed satisfactorily all the issues identified in  
20 the guidelines, and of course their EIS, their  
21 environmental impact statement will be made public, we  
22 will hold public hearings and participants will be asked  
23 at that time to discuss the acceptability of the AECL  
24 disposal concept in detail.

25           The Panel will consider all comments







1 submitted to it and will prepare its report as its final  
2 act to the Ministers of Environment and of Energy, Mines  
3 and Resources.

4 Could I ask those who have been registered to  
5 speak to attempt to summarize their concerns in 15  
6 minutes unless they have previously requested an  
7 additional 10.

8 The Panel will pay equal attention to written  
9 and oral statements. At the end of each presentation  
10 the Panel members may wish to ask certain questions of  
11 clarification of the speaker.

12 If you'd like to make a presentation but have  
13 not yet registered, please speak to any member of the  
14 Panel's secretariat and we will do our best, within the  
15 time constraints available to us this evening, to  
16 accommodate you.

17 The Panel will, in addition, accept written  
18 submissions identifying issues and concerns until the  
19 end of this month. That is up to November 30th of 1990.

20 With this by way of introduction, I would  
21 like to call first on Mr. Kenneth Emberley who has  
22 requested that he come first as he has to make a  
23 presentation elsewhere and I gather that is agreeable to  
24 the other speakers this evening. So if Mr. Emberley  
25 - would come forward, and I believe he is to be





1 accompanied by Mr. Hamish Gavin. Am I correct in that  
2 or are you speaking on your own?

3 MR. EMBERLEY: I'm speaking for two people

4 THE CHAIRMAN: Two people, very good. Thank  
5 you, Mr. Emberley.

6 MR. EMBERLEY: Do you need any magic trick to  
7 make these microphones work?

8 THE CHAIRMAN: You've got the button pressed,  
9 if you could speak fairly close to the mike then it's  
10 easier to pick up the sound, apparently.

11 MR. EMBERLEY: Mr. Chairman, my name the  
12 Kenneth Emberley. I belong to a number of environmental  
13 groups in the city and I'm speaking for myself. I've  
14 been studying this business for more than 15 years. I  
15 want to make a personal presentation, but first I will  
16 put on the hat of Mr. Hamish C.R. Gavin and speak the  
17 presentation he wished to make but he cannot make.

18 PRESENTATION OF MR. H.C.R. GAVIN (Given by Mr.  
19 Emberley):

20 I want to thank the lady in Ottawa that  
21 arranged for you to allow me this time to make two  
22 presentations.

23 Mr. Gavin says, "I wish to make a brief  
24 submission. I am sorry that I'm unable to attend in  
25 person.





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1                   The subject of nuclear waste disposal raises  
2 many technical, political, social, and philosophical  
3 questions. No other situation to date has raised the  
4 challenge of developing, building, operating and  
5 managing the physical structure and the institutional  
6 arrangement to last for many thousands of years. Be  
7 that as it may. I am convinced that to bury or store  
8 the material below ground would invite disaster.

9                   The saying out of 'sight - out of mind'  
10 appears appropriate. Experience with disposal with  
11 other materials through burial, deep well injection,  
12 ocean dumping and use of abandoned mines has shown that  
13 governments, institutions, and other organizations are  
14 very forgetful over time.

15                  I recommend that you seriously consider above  
16 ground storage. A mausoleum perhaps, highly visible and  
17 open to the public within reason, and this way the  
18 subject will not be forgotten. The public can be  
19 assured and a living institution can be created to  
20 provide the necessary safeguards.

21                  On any journey, and this will be a long one,  
22 the first step is the most important. I advise you not  
23 to be overly enchanted with technology, but rather to  
24 take the long view. the historical perspective is very  
25 important.







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1                    Respectfully submitted by Hamish Gavin."

2                    PRESENTATION BY MR. EMBERLEY:

3                    My own personal presentation, Mr. Chairman.

4                    Permanent retrievable storage. I don't think  
5 anything can be clearer or simpler. Yours is probably  
6 the 10th hearing this year and generally the results  
7 have been disappointing. The process, like the  
8 Rafferty-Alameda process, is designed to get the job  
9 done.

10                   I personally want to believe that you people  
11 want to get the job done well, and that is our hope.  
12 That's why we spend our time and our energy coming down  
13 here when there are many other things we would much  
14 rather be doing, although we meet nice old friends down  
15 here.

16                   How well you are allowed to do the job and  
17 how well you choose to do it will reflect on you, and it  
18 will reflect on us who participate in these hearings.

19                   Can it be two years ago we spent a day, an  
20 evening, with Bob Connolly, discussing making FEARO  
21 much more effective to preserve the land and people's  
22 quality of life.

23                   Our expert's analysis of legislation proposed  
24 to amend the laws governing FEARO indicates a failure,  
25 the same as other recent legislation to preserve the





1 land. The amendments proposed for FEARO legislation  
2 will cripple the hearings like this and will cripple and  
3 weaken the process when it needs to be strengthened very  
4 largely.

5 It is almost 50 years we've been looking at  
6 solid granite and then they suddenly decided that  
7 fractured granite with little streams running through it  
8 would be quite solid enough.

9 Have you had any hard rock miner and subway  
10 builder give you a 20 page diary of what it will be like  
11 during the 50 years they build this underground storage  
12 and then 10 years after you find out it's leaking and  
13 you have to get shovels and dig it up by remote control.

14 Have you ever thought of the actual project  
15 and the tens of thousands of tons that have to be moved?  
16 Are you sure you're going to make it retrievable?

17 The first requirement is easy access to  
18 correct, during the first 200 years, any possible  
19 errors. Can you imagine if you had built a nuclear  
20 waste storage site 40 years ago with the technology you  
21 had then. Would you really think that the technology  
22 that we have now will look so smart in 50 years time, if  
23 there are any improvements in the next 50 years like  
24 there have been even in the last 50.

25 Imagine somebody had stored something in the







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1 best scientific way 112 and a half years ago. How well  
2 do you think it would have lasted 112 and a half years?

3 The first requirement is easy access to  
4 correct during the first 200 years. Egyptian pyramids  
5 have almost 5,000 years of testing of the design. That  
6 should be your model for an up ground safe disposal  
7 site. Cubes of granite or limestone, five or six feet  
8 on a side could be installed over an area of collecting  
9 drains with similar size cubes holding the wastes based  
10 through a structure six to 20 layers thick. I think we  
11 have the technology to do it economically and safely.  
12 It can certainly be easily examined and easily  
13 dismantled to repair damaged containers. It would be  
14 quite safe and secure. It would be very hard for the  
15 average man to go in and move one or two layers of  
16 granite blocks or limestone blocks and sneak away with  
17 some containers of waste.

18 I believe a central library is necessary of  
19 all your publications relevant to waste disposal issue.

20 We are long overdue for a proper plan to  
21 include both low-level waste and mine tailings and  
22 dismantled nuclear power plant residue and address it  
23 all as a total problem of the industry. Someday that's  
24 going to have to be done.

25 On page 2 of your sheet, under socio-economic





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1 issues, you have a list of items to challenge the  
2 average grade eight student. I'm trying to find one  
3 here. It said something, if you build a building higher  
4 will it look taller? If you spend money in a community  
5 will it have any effect? Would you create jobs if you  
6 spend money in a community? Really, this was designed  
7 by a PR man. This is absolutely insulting to the  
8 intelligence of even the average environmentalist, and  
9 some of them have university degrees. None of the real  
10 serious questions are asked.

11 We've had talks about 37 square kilometres.  
12 Can you figure it? You figure the roads are going to be  
13 built and the tunnels and the holes 10, 20, 30,000  
14 tonnes stored, 500 pounds or a thousand pounds in a  
15 unit? It's massive.

16 Even a few years ago when there was talk of  
17 war, of course there's no talk of war now, we're in  
18 peace time again luckily, but three or four years ago  
19 when there was talk of war it would have been the most  
20 important military target in Canada. Think of the  
21 economic benefits of your community becoming the most  
22 economically and military important target in the  
23 country.

24 If two or three of the large weapons were put  
25 into a waste disposal site of course it wouldn't be hard







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1 to find any one of 70 or a hundred nuclear power plants  
2 in this country. So if we're going to dispose of our  
3 waste safely, the first requirement is we should start  
4 becoming less warlike. I think that should be a  
5 kindergarten theme in the elementary beginning, that you  
6 should talk about. That if you're going to dispose of  
7 nuclear waste safely, whether it's sitting beside a  
8 nuclear power plant or in the ground or above ground,  
9 the first thing to do is for us to become less warlike  
10 so other people won't shoot at us and then hope other  
11 people become less warlike. But I don't know whether  
12 that's in your terms of reference.

13 I'm concerned at the professional balance and  
14 the expertise of your scientific review group. Where  
15 are the Dr. David Suzukis, the Gordon Edwards, the Norm  
16 Rubins, the Anne Wiesers (phonetic), the Walter Robinses  
17 and the Maisies? Without them on the Panel, and on the  
18 committee that writes the final report, we feel we don't  
19 have enough citizen representation and maybe enough  
20 professional expertise, because if there's any bit of  
21 this professional expertise it's a citizen  
22 environmentalist. They're scientists, they're lawyers  
23 and they are plain ordinary smart housewives.

24 I enclose a very valuable paper for you.  
25 Please include it among your research documents. The







1 one is an assessment of the federal environment  
2 assessment legislation, a comment by Brian Pennell, and  
3 this managing public opinion, the Corporate Offence of  
4 Alex Carrie (phonetic) is a research document published  
5 by a friend of Helen Caldicott (phonetic), the lady that  
6 doesn't like nuclear war.

7 It's an official document detailing how  
8 business propaganda and the news media has controlled  
9 public opinion in the U.S.A. for 80 years, and they've  
10 been doing it in Canada for the last 10 years, and it  
11 has effects on your policy and my policy and on the  
12 policies of the country and without this vital  
13 background paper, which is now available to 110 of our  
14 top people in Canada, without it I don't think you can  
15 make a proper evaluation of the public's input, the  
16 public's understanding and the industry's effect on the  
17 nation. So I ask you to study it carefully and thank  
18 you for the time.

19 THE CHAIRMAN: Thank you very much, Mr.  
20 Emberley. Are you going to be able to leave us copies  
21 or at least let the secretariat take a note?

22 MR. EMBERLEY: I have asked her to make  
23 copies.

24 THE CHAIRMAN: All right. Fine. Thank you  
25 very much. I just wanted to make sure that we have





1 those references correctly when they are made by any of  
2 the presenters.

3 Could I ask whether there are questions which  
4 members of the Panel would like to put to Mr. Emberley?  
5 The presentation stands on its own.

6 MR. EMBERLEY: Thank you, Mr. Chairman.

7 THE CHAIRMAN: Thank you very much indeed.

8 ---Mr. Emberley withdraws

9 THE CHAIRMAN: The next person we shall hear  
10 from is Mr. Dave Taylor of the Concerned Citizens of  
11 Manitoba.

12 PRESENTATION BY MR. TAYLOR:

13 The Concerned Citizens of Manitoba have been  
14 involved in the issue of nuclear waste disposal now for  
15 over 10 years. It is a group that includes over a  
16 hundred members from various parts of the province, the  
17 Province of Manitoba and from all walks of life.  
18 Founded in 1978, Concerned Citizens have been involved  
19 in many environmental issues in Manitoba and across the  
20 country.

21 Our group sponsored the Nuclear Waste Issues  
22 Conference held in Winnipeg in 1986. It played a key  
23 role in the establishment of Manitoba's Bill 28,  
24 prohibiting the disposal of nuclear waste in the  
25 province and it holds a position on the Steering







1 Committee of the national Campaign for Nuclear  
2 Phase-out.

3 First thing I'd like to address is the nature  
4 of these hearings and the terms of reference. The  
5 concept of disposing of nuclear waste cannot be  
6 discussed, within the present terms of reference drawn  
7 up for this review. These parameters are so narrow that  
8 the real problem, which will continue to face Canadians  
9 for thousands of years to come, is not addressed.

10 Is it the high-level waste itself which  
11 should be focused on in these hearings? The single idea  
12 that AECL has come up with doesn't provide any  
13 solutions. It's the continued production of these  
14 wastes which must be carefully examined, and the people  
15 of Canada should have the right to decide whether this  
16 irresponsible and dangerous method of generating power  
17 should continue.

18 The position of Concerned Citizens of  
19 Manitoba on all waste issues, from household garbage to  
20 hazardous waste, has always been reduction at source.  
21 You can't solve a garbage problem without looking at  
22 where the garbage is coming from.

23 The terms of reference also specify that the  
24 subject of the hearings will be the deep geological  
25 disposal concept. This is a concept put forth to the





1 exclusion of all other options. It is put forth by the  
2 same industry which is trying to expand Canada's nuclear  
3 commitment. They depend on this Panel to endorse this  
4 hypothesis which can never be validated. If you do  
5 endorse this concept you will be providing them with a  
6 false solution which they so desperately need.

7 Why do we even have to dispose of the  
8 existing waste? Why can't it be kept above ground where  
9 it can be retrieved? Why does it have to be put into  
10 the middle of one of the earth's most delicate and  
11 beautiful regions?

12 The terms of reference were developed under  
13 the minister of the same department that advocates the  
14 use of this energy option. Surely this conflict of  
15 interest cannot be allowed. If the problem of nuclear  
16 waste is to be justly deliberated upon, an impartial  
17 body of individuals such as yourselves should set out  
18 the framework. As members of this Panel, you really  
19 have to ask yourself, is this a fair and unbiased method  
20 of addressing such a multi-faceted topic?

21 Disparities in time and money. AECL has had  
22 over 10 years and over 300 million dollars to fine tune  
23 their sales pitch. Opponents were allowed five weeks  
24 and a minimum of financial support to present their  
25 cases to this scoping hearing. We strongly object to







1 these inequities. Groups across the nation are in  
2 contact with scientists who are critical of this  
3 concept. Due to the restrictions placed upon us by  
4 these hearings we will not have the opportunity to  
5 prepare a scientific critique of this concept.

6 Mandate. The role of FEARO, as it is written  
7 in their document entitled 'Environmental Assessment  
8 Panels,' is to assess the potential environmental  
9 effects of the proposal. Concerned Citizens does not  
10 believe that assessing a concept falls within the  
11 mandate of this Panel. Are these to be environmental  
12 hearings with no environment? How can this Panel asses  
13 the environmental effects of a proposal when none of us  
14 know what environment we're talking about.

15 By conducting such a nebulous process you  
16 will have moved closer to the site selection stage with  
17 less opposition. Is this one of the hidden objectives  
18 of these hearings?

19 Quite frankly, if these hearings pertained to  
20 a specific environment on the Canadian Shield your  
21 hearings would be run out of town. Canadians do not  
22 want a nuclear dump site in their communities.

23 Recommendations. When this Panel finally  
24 reaches a series of conclusions about this proposal,  
25 recommendations are likely to go the way of other







1 reports on this subject. It is likely your  
2 recommendations will be filed next to the 11th Hour, a  
3 1988 report of the Standing Committee on Environment and  
4 Forestry. This committee recommended that a moratorium  
5 be placed on the construction of nuclear power plants in  
6 Canada. The document and its recommendations have been  
7 completely disregarded by the minister.

8 We feel that this Panel should have the same  
9 latitude as the standing committee to make substantial  
10 recommendations about the waste itself. Operating  
11 within the accept or reject framework does not address  
12 the problem. Any conclusions that do not allow for the  
13 expansion of Canada's nuclear industry will not be  
14 tolerated under the present terms of reference.

15 The concept itself. Predicting nature. A  
16 lot of research has been conducted over the years by  
17 scientists at Atomic Energy of Canada Ltd. Much of it  
18 is based on a theoretical foundation which is as cracked  
19 as the shield itself. The concept is based on the use  
20 of models to estimate and predict what will occur for  
21 millions of years to come. The most basic assumption  
22 behind all this research is that because the shield has  
23 been stable for hundreds of millions of years it will  
24 remain that way for further millions of years.  
25 Predicting natural phenomena is dangerous and imprudent.





1 Predicting how nature will function for millions of  
2 years is just plain folly.

3 Unproven techniques such as pathways analysis  
4 attempt to include all the possible pathways and the  
5 time it will take for the radionuclides to move along  
6 them. The computer models for determining such  
7 variables can never be comprehensive.

8 We are told that there will eventually be  
9 releases to the environment, but it is estimated that  
10 they will be insignificant. Has science ever  
11 successfully accounted for all the variables in nature?  
12 Does true science even attempt to perform such  
13 incredible feats?

14 The study of geology, which is focused on the  
15 natural phenomena of the shield, has never been a  
16 predictive science. Geology is a descriptive science.

17 Methodology behind this disposal concept is  
18 best summed up by the Atomic Energy of Canada Ltd.'s  
19 original description of this part of their research.  
20 Until it was changed it was called 'The Concept  
21 Verification Stage.'

22 scientists the world over have always tested  
23 and attempted to prove or to disprove their own  
24 hypothesis. To call it a concept verification stage, to  
25 try and verify a concept doesn't sound like science.







1                   There will be a great deal of technical  
2 information and data analysis involved in the review of  
3 this concept, but we would urge you as members of this  
4 Panel to look beyond the convincing arguments and the  
5 statistics to the theoretical framework upon which this  
6 hypothesis is based.

7                   You're being asked not only to review a  
8 concept but to endorse a new method of performing  
9 scientific research. Science cannot accurately predict  
10 nature for that period of time.

11                   Sources of waste. Much of the literature  
12 AECL has been making public justifies the need for a  
13 repository based on the existing waste which is  
14 presently being stored in Canada. There are a number of  
15 issues to be considered when discussing the sources.  
16 Are we considering one repository, or does endorsing the  
17 concept pertain to an unlimited number of repositories  
18 which will contain all future wastes?

19                   In addition, are we only considering Canada's  
20 high level nuclear waste or could these repositories be  
21 used for commercially disposing of other countries'  
22 waste?

23                   AECL's Dr. Goodwin recommended turning  
24 northern Canada into "a nuclear waste disposal site for  
25 the world." These are certainly issues that must fall





1 within the scope of these hearings.

2 Irretrievability. This scheme involves  
3 permanent disposal, not storage. What provisions are  
4 being made for retrieving the waste in case the  
5 repository has been disturbed or will be disturbed. Can  
6 we morally use this outhouse technology without  
7 continuous monitoring? When I say outhouse technology  
8 I'm referring to the concept itself, namely putting the  
9 waste in the ground, covering it over and walking away.

10 Has there been a study performed in which  
11 AECL has reviewed the consequences of returning the  
12 canisters to the surface of the earth? Have they  
13 performed any test to see what the ramifications of an  
14 early leak would be? Are they prepared to contain the  
15 radionuclides from entering the waterways of the shield  
16 if a leak does occur, or do we just trust them? It  
17 appears to be a plan without contingencies.

18 Jurisdictions. Ultimately the federal  
19 government is responsible for radioactive materials, yet  
20 the Province of Manitoba has Bill 28 prohibiting the  
21 disposal all of nuclear waste within its boundaries.  
22 Does this Panel recognize this bill or is it considered  
23 ultra vires? The literature has suggested the proposed  
24 repository would be in Ontario. Many communities are  
25 now attempting to implement their own bill prohibiting





1 nuclear waste storage. Will communities have the  
2 opportunity to say no to this concept? Is there any  
3 point in reviewing the environmental effects of a  
4 concept which no one wants?

5 The Canadian Shield is blessed with a very  
6 interconnected series of waterways. The social and  
7 legal implications of placing a repository in one  
8 jurisdiction that naturally connects with another must  
9 be carefully considered.

10 For example, if a community in northwestern  
11 Ontario would agree to such a repository, do they have  
12 the right to jeopardize the water system that eventually  
13 flows into Lake Winnipeg?

14 What is now occurring in the process that the  
15 U.S. is conducting into nuclear waste disposal is that  
16 states and communities are passing bills similar in  
17 nature to Bill 28, and as a result the process has  
18 ground to a halt.

19 Liability and freedom of information.  
20 Canada's nuclear industry has, since its inception, been  
21 given preferential treatment regarding insurance,  
22 liability and the need to divulge information to the  
23 public. Canada's Nuclear Liability Act exempts nuclear  
24 manufacturers from the event of an accident and limits  
25 the liability of nuclear operators. Will such a







1 repository be given the same protection from  
2 responsibility as the industry has had in the past?

3 In the case of an accident en route to or  
4 involving the shaft itself, who will pay the public for  
5 the damages? Will the public be given the right to  
6 information about the repository? At present AECL is  
7 exempt under Canada's Freedom of Information Law. Will  
8 this veil of secrecy surround the concept and the site?  
9 Will the public ever know if an accident occurs?

10 Standards. The estimated releases to the  
11 environment and their possible effects on humans are  
12 based on today's standards of radiation exposure as  
13 established by the AECB in Canada. After only a few  
14 decades these standards are being significantly  
15 tightened.

16 We have learned in a few short years that  
17 radiation has more harmful effects than previously  
18 believed. The U.S. National Academy of Sciences  
19 recently published risk estimates for radiation which  
20 were eight times more dangerous than previously  
21 believed. Will today's standards be acceptable to  
22 future generations? Considering there is no safe level  
23 of radiation there can be only one acceptable standard  
24 for a repository. Zero releases.

25 The transportation of high-level nuclear





1 waste presents a grave risk in itself. The use of a  
2 repository will entail the movement of large shipments  
3 of waste. This practice has been quite limited in the  
4 past. Since truck accidents are estimated to occur at a  
5 rate of one per 400,000 miles and it's done by Sandia  
6 Labs, 1976, is this factored into AECL's risk  
7 assessment? Each shipment releases radiation to the  
8 environment. Have these releases been factored into the  
9 equation for public exposure? Will experiments on cask  
10 integrity be conducted in Canada or are Ontario Hydro  
11 standards based on the crash test conceived in 1961 in  
12 the U.S?

13 In conclusion, unless the present terms of  
14 reference are significantly altered, Concerned Citizens  
15 of Manitoba feel that this Panel has no other option but  
16 to resign. The problem which you are attempting to  
17 address cannot be dealt with without discussing the  
18 origin of the waste.

19 In addition, you're being asked to make  
20 recommendations concerning an environment which you  
21 don't even know. Further, the terms of reference have  
22 been dictated to you by the same minister who is  
23 responsible for the expansion of Canada's nuclear  
24 industry. Any concept that proposes to isolate  
25 high-level nuclear waste from the environment for







1 millions of years needs to be approved by the people who  
2 will be facing the risks. Those people are not here to  
3 make that decision. We are not relieving them of a  
4 burden. We are complicating the one we have already  
5 created for them.

6           There are no guarantees on this idea. In  
7 fact, we are told that it is just a matter of time  
8 before the repository will leak. Our generation will  
9 probably not be around when it happens. Do we have the  
10 moral right to impose such a decision on future  
11 Canadians? No high-level nuclear wastes have been  
12 permanently buried anywhere in the world, yet AECL has  
13 that audacity to propose that it can predict what no one  
14 has done before.

15           Nuclear waste does not fit this outhouse  
16 technology.

17           Thank you.

18           THE CHAIRMAN: Thank you, Mr. Taylor.

19           I think just as a point of fact, the terms of  
20 reference as I understand them were drawn up by the  
21 Minister of the Environment, no doubt in collaboration  
22 with the Minister of Energy, Mines and resources. I  
23 don't know whether that makes any difference to your  
24 thinking, but we certainly were appointed by the  
25 Minister of the Environment and we know that he had a





1 great deal to do with the terms of reference. I just  
2 mention that as a matter of fact.

3 MR. TAYLOR: Thank you.

4 THE CHAIRMAN: Are there questions which  
5 members of the Panel would like to put to Mr. Taylor?

6 THE CHAIRMAN: Dr. LaPierre.

7 DR. LAPIERRE: Mr. Taylor, in one of your  
8 opening remarks or paragraphs, you indicated that the  
9 people of Canada should decide how and when wastes  
10 should be managed. Could you elaborate you on how they  
11 should do that?

12 MR. TAYLOR: I would think the only way would  
13 be through a referendum.

14 DR. LAPIERRE: Okay. Thank you.

15 MR. TAYLOR: I think it's too big an issue  
16 to -- not to have everyone consider it.

17 THE CHAIRMAN: Ms. Roy.

18 MS. ROY: Mr. Taylor, as far as existing  
19 terms are concerned, do you feel that there is a need to  
20 evaluate options for managing existing waste and compare  
21 these options with using different scenarios as  
22 reference for comparison even if the site selection  
23 processes are not there? Even if we don't have any  
24 sites to relate to?

25 MR. TAYLOR: I'm not sure if you were





1 speaking about disposal or about storage.

2 MS. ROY: Any option to manage the existing  
3 waste. Let's say if we talk about existing waste only,  
4 do you think that it could be useful to compare options?

5 MR. TAYLOR: Certainly.

6 MS. ROY: Disposal or storage or --

7 MR. TAYLOR: Not disposal, storage.

8 MS. ROY: You do not feel it could be useful  
9 to compare storage to disposal?

10 MR. TAYLOR: Disposal no. Storage yes. A  
11 number of options need to be considered about the  
12 existing waste. We have the waste, the waste is here.  
13 We must do something with it.

14 MS. ROY: Why do you exclude disposal?

15 MR. TAYLOR: Because disposal is permanent.

16 MS. ROY: Okay, so you would agree to compare  
17 options that are considered relating to managing the  
18 waste at site?

19 MR. TAYLOR: Yes.

20 MS. ROY: Thank you.

21 THE CHAIRMAN: Other questions for Mr.  
22 Taylor?

23 Thank you very much indeed.

24 MR. TAYLOR: Thank you.

25 ---Mr. Taylor withdraws







1                   THE CHAIRMAN: The next participant for this  
2 evening's session will be Dr. Jovan Jovanovich, of the  
3 University of Manitoba.

4   PRESENTATION BY DR. JOVANOVIH:

5                   Thank you, Mr. Chairman, for giving me an  
6 opportunity to address this Panel. I have just  
7 distributed to you a summary of comments that I was  
8 planning to make to the Panel as of last night. I think  
9 I'll deviate from that scenario here, the text, mainly  
10 by shortening it.

11                  I have, about a couple of months ago, sent to  
12 Mr. Greyell several of my papers and writings on the  
13 nuclear power and the spent nuclear fuel. The main one  
14 being, How to Live With Nuclear Power, the Problem of  
15 Spent Nuclear Fuel. I believe you have all received  
16 that article that was published in Physics in Canada in  
17 March 1989 issue.

18                  Recently I have submitted for publication an  
19 article that was entitled, Sustainable Economic  
20 Development and The Necessity of Nuclear Power. I  
21 believe you have that paper as well.

22                  I have over here a few more papers that I  
23 didn't send you before. I don't have 10 copies to give  
24 to each of you, but I have one copy and I'll give it to  
25 Mr. Greyell at the end.





1            Now let me first make a comment about the  
2 Panel and scientific review group. When I read the list  
3 of people who were appointed I was really pleased with  
4 the caliber of the people who had appointed on it, but I  
5 was disappointed that there were no nuclear physicists,  
6 not even a physicist on either the Panel or the  
7 Scientific Review Group. There was a geophysicist on  
8 the Scientific Review Group, but not -- certainly not a  
9 nuclear physicist. I think this is an omission  
10 presumably by the Minister of - I don't know -  
11 Environment, and I hope this can be corrected. I think  
12 this Panel will have to deal with many, many technical  
13 issues, and I should say you need on line access to  
14 nuclear physicists for these issues.

15            Let me make some introductory comments about  
16 the nuclear waste and the terms of reference of this  
17 Panel. I think as you will see later on, I feel the  
18 terms of reference should be extended, but in fact this  
19 is being done already by having another Panel being  
20 organized that will look at the issue of energy in  
21 total. I feel that these two Panels will have to work  
22 closely together and this Panel will have to have the  
23 input from the other Panel, for the simple reason that I  
24 believe the other Panel will have to decide whether  
25 nuclear power is essential for the world or not.







1 I believe that the other Panel will decide  
2 that nuclear power is essential for the world and that  
3 the world will use a lot more of it, perhaps a hundred  
4 times as much in the future, not next year of course.

5 If the nuclear power does become the main  
6 source of energy that will power the world, the nuclear  
7 waste problem, or better to say spent fuel problems,  
8 will be very different than what they are now, because  
9 if there is a lot more of it new technologies will be  
10 developed to deal with the new problems that will be a  
11 lot better.

12 I am not trying to say that nuclear power is  
13 an ideal form of energy, but essentially what I'm saying  
14 is thanks God for giving us nuclear power so that we  
15 don't have to fight chemical wars for the last barrel of  
16 oil.

17 Let me just elaborate a little bit on it. I  
18 should tell you that one Chinese uses about 45 times  
19 less electricity than we do in Canada, and one indian,  
20 70 times less than we do. You think that two billion  
21 people living in China, in India, will forever stay with  
22 this low consumption of electricity, or that they're  
23 going to increase their electricity consumption by 10 or  
24 a hundred times. If they do, what fuel will they use?  
25 Coal or nuclear power? There is not enough of the other





1 forms. But that will be, I think, I hope, the subject  
2 of the other Panel, but it does influence the  
3 deliberations of this Panel.

4 Once the nuclear power is so widely used, I  
5 feel that fuel reprocessing will have to be done.  
6 Therefore fuel reprocessing cannot be outside the terms  
7 of reference of this Panel either.

8 I should also perhaps tell you that within a  
9 narrow circle of nuclear physics professionals, it's  
10 well-known that the amount of the nuclear fuel or  
11 nuclear waste by reprocessing, and a process that's  
12 sometimes called incineration could be decreased by a  
13 factor of thousand, and it's persistence in nature, the  
14 length of how long it stays in nature, could be  
15 decreased from millions of years to hundreds of years.

16 I would also like to make a comment that  
17 there is no urgency to solve the problem of nuclear  
18 waste forever. I think there is an urgency to solve  
19 another related problem with the use of energy, and  
20 that's carbon dioxide. So I usually ask the question,  
21 what is better to have? Contained nuclear wastes or  
22 released carbon dioxide and acid rain? It would be very  
23 nice to have neither of the two, but I cannot see that a  
24 source that will be able to do neither of the two and  
25 that would be still affordable, because solar is not





1 affordable.

2           The relationship between scientific problems  
3 and social problems, of course, is going to be addressed  
4 by the Panel. It has been mentioned already by a number  
5 of speakers today, and I'm sure in the past in other  
6 cities, so I will not dwell on that and I'll skip this  
7 section, except to point out that I believe that the  
8 education of the public, of the media, is of utmost  
9 importance. If we are going to have public input into  
10 these various important questions, that public must be  
11 informed and be educated about the technical issues. A  
12 wrong technical understanding of a number of issues and  
13 good decisions cannot be made.

14           There are issues like how dangerous is  
15 nuclear waste? How dangerous is radiation? That's of  
16 course a very long story that I'm not going to dwell  
17 upon. But I would like to remind the Panel that there  
18 is no absolute safety and that we cannot ask for, or  
19 expect to have the absolute safety. That thing does not  
20 exist, never did, and never will.

21           There are issues of economics that I think  
22 the Panel should discuss and I believe it will. It's  
23 essentially how much money we should spend in order to,  
24 say, possibly increase life expectancy of us, of me and  
25 you, by one minute or by one day or by one year.







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1 I usually discuss this question in a short  
2 form referring to the radon problem, which was so  
3 popular in Winnipeg in the past couple of years, which  
4 is not directly related to this issue of nuclear waste,  
5 but it's a characteristic. I ask you a question. If a  
6 homeowner has \$2,000 to spend in improving his house  
7 should he spend that in radon proofing it or in fire  
8 proofing it? I think it's a question that should be  
9 discussed in the case of radon pollution and that  
10 questions of these kinds should be also addressed in the  
11 case of nuclear waste.

12 The next comment I would like to make is to  
13 ask a question, is spent fuel a waste or a resource? I  
14 have discussed that issue in the article that you have a  
15 copy of in the Section C4A and the figure 4, and my  
16 answer is, a good part of that fuel will be a resource.  
17 I don't know whether I have time to elaborate on it, but  
18 maybe if you'd like me to elaborate you can ask me a  
19 question afterwards.

20 There are more questions, of course, usually  
21 it is asked, is it moral to leave our spent fuel to our  
22 grandchildren to worry about? But we can also and  
23 should also ask the questions is it moral to dispose  
24 irretrievably-of spent fuel permanently in spite of the  
25 possibility that our grandchildren might need it?





1 Well I have, Mr. Chairman, now perhaps two  
2 options. One is to go quickly through the  
3 recommendations on page 4 or perhaps to read several  
4 sections from the discussion in my paper. What would  
5 you like to me do?

6 THE CHAIRMAN: Well, I think I must leave  
7 that decision to you, Dr. Jovanovich. Whatever you  
8 think would be most helpful. We have received, all of  
9 us, the paper that you were kind enough to provide back  
10 in the autumn. Perhaps the most useful thing would be  
11 to draw attention to what you think are, in your own  
12 words, are the most important considerations for us, as  
13 we look to the preparation of our guidelines.

14 MR. VAN VLIET: Okay, I'll go on with the  
15 short summary of recommendations.

16 Number one, I would like to point out that  
17 there is no hurry to solve that problem. When I say no  
18 hurry, I'm not implying there is no hurry to solve it  
19 over the next five years. I think we probably have 50  
20 years to solve it. The problem has not been solved  
21 forever. The accumulation of waste is not sustainable,  
22 but we have lots of time before we have to solve it.

23 It is my opinion that we should not dispose  
24 of any spent fuel yet or at least not dispose of it for  
25 another few decades. We might need it. We should pay







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1 special attention to the education, which refers to  
2 funds. Who is supposed to educate public? Is it the  
3 nuclear industry or universities or the media or the  
4 NGO's? I think by and large, at the present, the media  
5 is educating the public. I don't think that the media  
6 is doing the best job on it.

7 As far as a temporary storage is concerned, I  
8 think so far AECL and Ontario Hydro have been doing a  
9 good job on it, and I presume they will continue doing a  
10 good job on the temporary storage.

11 I think the present work on the underground  
12 disposal of the storage, AECL project can be used also  
13 for storage which might turn out to be a very  
14 economically effective way of storing and monitoring the  
15 waste. I am not quite interested, or not quite certain  
16 about the details of the research at the present.

17 While I said that there is no hurry for the  
18 permanent disposal, I think it might be worthwhile to  
19 start looking for a retrievable underground storage, not  
20 permanent, but retrievable.

21 I think it should be time soon to start  
22 research on reprocessing of nuclear fuel. There is no  
23 way, I believe, that the world can live without breather  
24 reactors which are not all that pleasant reactors to  
25 work with and they rely on the processing of spent fuel.





1           There are a number of options that are  
2 possible as far as the storage incineration or disposal  
3 of spent fuels is concerned. The work should be  
4 proceeding on these options, and certainly the mandate  
5 of this Panel should be, and I believe it will be, to  
6 look at all these other options.

7           I think it will be also reasonable for this  
8 Panel to start looking at a possibility of accepting, in  
9 fact, spent fuel from other countries for the simple  
10 reason that it may be a good business to do it, and with  
11 this, perhaps I would finish, and I hope you will have  
12 some questions to allow me to return back and elaborate  
13 on some of the statements I've made.

14           THE CHAIRMAN: Thank you, Mr. Jovanovich.

15           You raised a question as to whether we have  
16 either in the Panel or in the SRG sufficient range of  
17 expertise to address this, indeed, very complex  
18 question. Could I just point out to you that we  
19 certainly have the option, and I'm sure we will be  
20 availing ourselves of it, to hire additional help to  
21 take on additional areas where we feel we need expertise  
22 to do an effective job, and we shall certainly be  
23 looking at that in the near future. So we are not  
24 limiting ourselves to what we have assembled here or in  
25 the SRG even. We will have a wider range on which we





1 can draw to make sure that we get the best possible  
2 advice.

3 DR. JOVANOVIĆH: Thank you very much. I  
4 didn't know about these details.

5 THE CHAIRMAN: Could I ask members of the  
6 Panel if they would like to put any questions to Mr.  
7 Jovanovich, Dr. Jovanovich?

8 Dr. LaPierre.

9 DR. LAPIERRE: Dr. Jovanovich, you mentioned  
10 reprocessing of spent fuel. Doesn't that also produce  
11 waste?

12 DR. JOVANOVIĆH: Sure it does, but it's a  
13 different kind of waste. How long can I take to explain  
14 it, to answer the question? It's really -- that is the  
15 issue, yes it does, but once you sort out the waste into  
16 various components, once you partition it, then  
17 certainly wastes, what is nowadays waste in the  
18 unprocessed fuels is plutonium and, of course, uranium  
19 itself you put that back into reactor and get the  
20 energy. So this is one thing that you can do with it,  
21 and that is actually being done in France on a grand  
22 scale. It's not being done in Canada and the United  
23 States.

24 Then if you actually look at the Table 2 in  
25 my paper, you will see that waste is divided there into







1 three groups, efficient products and medium lived,  
2 efficient products long lived and transuranic. The  
3 transuranic products are, in a sense, fuel. They could  
4 be put back into the reactor and burned. Transuranic  
5 products are the most radio-toxic and they live for a  
6 very long time as this table shows. By burning  
7 transuranic products, you are reducing radio-toxicity of  
8 the waste by something of the order of a thousand, and  
9 you are eliminating those nasty transuranic products  
10 that live thousands and millions of years. Then you're  
11 left with efficient products of medium lived, medium  
12 life, the longest being essentially 30 years half life  
13 with the exception of TIN-121, which is half life of 76  
14 years. All this is gone after a few hundred years. So  
15 what's left over is efficient products, long lived,  
16 which are produced in very much smaller quantities.  
17 Some of them are produced in such small quantities that  
18 you could probably just dump them into the environment  
19 without any harm whatsoever.

20 I have mentioned that absolute confinement  
21 doesn't exist and maybe if you ask me a question about  
22 that I'll elaborate on it too.

23 DR. LAPIERRE: Thank you.

24 THE CHAIRMAN: Other questions? Dr. Wilson.

25 DR. WILSON: In your recommendations you've





1 said start research on other options, and by this I  
2 assume that you're wanting us to direct AECL to do this.  
3 What would be the other options that you'd like to see  
4 research started on?

5 DR. JOVANOVIĆ: Well, as I broadly said in  
6 the article, actually in Section C3, I've listed the  
7 whole possible set of options of it. There is a  
8 possibility in principle to get rid of the waste by  
9 shooting it out into outer space, to keep it under the  
10 control on the surface of the earth and monitor it, as  
11 many speakers today have argued that it should be done,  
12 or to get rid of it underground in pluton rocks or deep  
13 sea disposal or various other geological disposal.

14 There is also an option of incinerating  
15 nuclear waste by, what I have mentioned already,  
16 partitioning them and burning them either in reactors or  
17 in accelerator breeder devices that would be made  
18 especially for that purpose. So there are a number of  
19 other options which should not be ignored.

20 THE CHAIRMAN: Other questions from other  
21 members of the Panel?

22 If not, we thank you very much, and rest  
23 assured not only your presentation, oral presentation,  
24 but the material you were kind enough to send us earlier  
25 is part of the record for us and we shall be looking at







1 that as we go on about our further work.

2 Thank you very much indeed, Dr. Jovanovich.

3 DR. JOVANOVIICH: Thank you.

4 ---Dr. Jovanovich withdraws

5 THE CHAIRMAN: The next speaker I have on my  
6 list is Mr. Egon Stanik.

7 PRESENTATION BY MR. STANIK:

8 Yes, Mr. Chairman, ladies and gentlemen,  
9 thank you for inviting me to present my view at this  
10 scoping session and considering the time of day, I  
11 promise you all I'll be short and brief.

12 I'm a professional engineer and I have  
13 recently retired from CN Rail after 35 years of  
14 industrial engineering, and during that time I've also  
15 been in charge of environment protection and energy  
16 management.

17 Now, in that capacity, and also because of my  
18 own personal interest, I have been following, mostly  
19 from the sidelines, the national and international  
20 debates on the future of nuclear wastes.

21 Now from an engineering point of view, I am  
22 convinced that Atomic Energy of Canada Ltd. has done and  
23 continues to do a thorough investigation of all safety  
24 aspects and subsequent application to the permanent  
25 disposal of nuclear wastes.





1                   This is certainly reflected in their ongoing  
2 work at the Whiteshell laboratories in Pinawa and at the  
3 underground research laboratory near Lac du Bonnet.

4                   As a result, I firmly believe that AECL's  
5 eventually accepted method of disposal for nuclear  
6 wastes will be the safest in North America, from what  
7 I've read so far, and it will certainly rank amongst the  
8 safest in the world, if not the safest.

9                   The question, however, arises for how long  
10 any man-made installation will remain safe, and more  
11 importantly, secure from any intrusion, whether it's  
12 human or natural.

13                   In my search for published material on the  
14 subject I was surprised to discover that not much work  
15 has been done on the security of nuclear waste sites,  
16 and by the way, Mr. Chairman, at this point I should  
17 thank the good office of Mr. Michael Tomlinson at the  
18 AECL in Pinawa who directed me to the only material  
19 available on the subject. I also found out that with  
20 the exception of some oblique reference to long-term  
21 security, almost all work concentrated on only one  
22 aspect, namely human intrusion.

23                   In fact, the Radioactive Waste Management  
24 Committee of the Nuclear Energy Agency had realize that  
25 ground water release had been analyzed extensively,





1 while little work had been done on human intrusion. As  
2 a result the Nuclear Energy Agency organized a workshop  
3 on the risks of human intrusion as late as June 1989.  
4 It's a little bit over a year ago.

5 While this aspect was covered extensively at  
6 the workshop by means of theoretical computer models and  
7 risk analysis - there just isn't anything else  
8 available - I could not find anything where the subject  
9 of long-term security has been discussed, and I promise  
10 you I looked for it. I couldn't find anything.

11 I have been given to understand that in some  
12 500 years, the nuclear waste which we have produced up  
13 to now will still be quite hazardous to human life as  
14 well as to other life forms.

15 AECL tells us that in 500 years the radiation  
16 dose from nuclear wastes will have diminished from some  
17 53,000 millisieverts per hour to 0.82 millisieverts per  
18 hour. Now for anyone being exposed continuously to the  
19 latter dose, this, if my calculations are correct, would  
20 amount to some 7,200 millisieverts per year or 2,600  
21 times the average annual dose of radiation Canadians  
22 receive today. That's in 500 years from now. And AECL  
23 pointed out, quite correctly, that wastes would require  
24 containment at that radiation rate.

25 If these figures are correct, I feel somewhat







1     uneasy when we consider that we must construct and  
2     maintain the waste disposal site which will be  
3     guaranteed to function the way it was designed 500 years  
4     earlier, and just as important, whose very existence,  
5     location, contents, and characteristics will be known to  
6     those who will come after us for many generations.

7             I find this prospect somewhat daunting.

8             I don't believe in a doomsday attitude.  
9     Instead I prefer a realistic view to the unfounded  
10    optimism which implies that since we've tried our best  
11    it must, therefore, be the best.

12            A few examples will elaborate my point. An  
13    electronic miracle of its time was put to sea equipped  
14    with the latest radar safety devices known to man and  
15    plied the oceans for three years before the Andrea Dorea  
16    sank after a collision with the Stockholm, off Nantucket  
17    Island in 1956.

18            The Vickers Viscount and the Comet were the  
19    first pure turbo jet civilian passenger planes in Great  
20    Britain, the joy of Great Britain. After two Comets  
21    mysteriously dropped from the skies in 1954, at a great  
22    loss of lives, the aircraft were grounded forever.  
23    Ironically the accidents occurred 100 years after a  
24    British engineer discovered and identified the  
25    phenomenon of metal fatigue, the cause of both crashes.





1           The only reason we have recalls is because we  
2 sometimes don't know how to do things right the first  
3 time. Since we cannot put out a recall on a nuclear  
4 disposal site, we must leave something in place to  
5 permit future generations to take corrective actions.

6           I have two more examples which, I think,  
7 drive home the point which I'm trying to make.

8           Today, nobody would explode a dirty nuclear  
9 device in the desert, ask hundreds of soldiers to take  
10 cover in fox holes to avoid the first pressure wave and  
11 then ask them to walk across the desert toward the  
12 centre of the explosion, yet some 45 years ago, the  
13 world's best nuclear scientists assured the military  
14 that this was a perfectly safe maneuver.

15           For many years Yucca Mountain in California  
16 has been regarded as one of best, if not the best, site  
17 for a nuclear waste depository, primarily because of its  
18 elevation above water levels and because of virtually no  
19 precipitation in the area. Very recent evidence, I  
20 think in the last two months, however, suggests that  
21 Yucca Mountain has experienced high water levels in the  
22 distant past rendering the site useless.

23           Mr. Chairman, what I've been trying to say,  
24 is that from a social point of view in general, and  
25 specifically from an engineering point of view, it is a







1 fallacy to think that we know best. Instead we should  
2 remind ourselves on occasions like this that we know  
3 less than the generations which will come after us, and  
4 we are trying to protect.

5 If we assumed for a moment that we possess  
6 the knowledge and experience of our great, great  
7 grandchildren, say some hundred years from now, would we  
8 have underground research laboratories and resulting  
9 nuclear depositories? Would we even contemplate such  
10 arrangements? I doubt it very much. Just as we today  
11 no longer propel ships by oars or wind power or make  
12 potash by burning limestone, instead of mining it much  
13 more efficiently, we would undoubtedly dispose of  
14 nuclear waste in a much more elegant, efficient and  
15 safer way. If we had to deal with this problem at all.

16 We therefore know that while we are trying  
17 our best to safeguard nuclear wastes we must find ways  
18 to let future generations know of such depositories.

19 As I have mentioned earlier, I think AECL is  
20 on the right track in pursuing deep vaulted depositories  
21 in the Canadian Shield. This is also supported by  
22 evidence at Oklo in Gabon, West Africa, where some two  
23 billion years ago four natural atomic reactions took  
24 place and didn't go anywhere in two billion years. So I  
25 think AECL is on the right track.





1                   To increase the security of nuclear waste  
2 depositories for future generations would be to  
3 disseminate pertinent information on the depositories on  
4 the widest possible scale - and I was very pleased to  
5 hear that Hamish Gavin sort of had a similar idea  
6 earlier - such as a network of international monitoring  
7 agencies. This is based on the fact that the wider the  
8 information is distributed the less likely it will be  
9 lost or forgotten. This, I believe, is probably the  
10 most critical factor when we deal with a project  
11 life-time of some 500 years.

12                   Such an international monitoring agency would  
13 have several functions. To monitor continuously every  
14 site, to inspect regularly every site, to avert any  
15 human intrusion, whether inadvertent, such as geological  
16 explorations, or clandestine, to report to the host  
17 country any natural disasters such as flooding, quakes,  
18 and take part in remedial actions, to be the central  
19 agency to gather and disseminate new knowledge on  
20 nuclear waste disposal sites, to be the only agency  
21 permitted to enter nuclear waste depositories.

22                   I believe that this approach would enhance  
23 the possibility of passing on vital information for  
24 future generations who will be better equipped to manage  
25 nuclear waste. As a result such actions would greatly







1 increase the security for those who come after us.

2 I would, therefore, ask that the Federal  
3 Environmental Assessment Panel address the issues which  
4 I have attempted to raise.

5 I would like to leave with you one thought  
6 which kept recurring when I put those few pages  
7 together.

8 When we continuously experience great  
9 difficulties in trying to understand our past, what our  
10 forefather's thought, what they did, and why they did  
11 it, can we claim to predict the future with any degree  
12 of accuracy. Knowing our past performance, I wonder how  
13 much credibility we have to act as if we had the  
14 knowledge only our successors will possess.

15 Thank you, Mr. Chairman.

16 THE CHAIRMAN: Thank you, Mr. Stanik.

17 Are there any questions which Panel members  
18 would like to put to Mr. Stanik arising out of his  
19 presentation? Dr. LaPierre.

20 DR. LAPIERRE: One question regarding the  
21 international monitoring agency which you attributed a  
22 series of functions to. Who would control and name such  
23 a --

24 MR. STANIK: Hopefully, as successful as the  
25 United Nations is being controlled. Along that line.







1 It would have to be, I suppose, a voluntary agreement  
2 with all nations that are interested that whatever  
3 they're trying to do stays alive and can be maintained  
4 until such time when other generations can do something  
5 or improve on what we've done.

6 I haven't given any thought of any particular  
7 details. I do foresee that such agencies are possible  
8 because there are others which do work.

9 DR. LAPIERRE: - Thank you.

10 THE CHAIRMAN: Any further questions? Ms.  
11 Roy.

12 MS. ROY: Mr. Stanik, should we assume that  
13 you're asking the assessment to focus only on deep  
14 disposal or are there other options to be considered?

15 MR. STANIK: No, I'm only saying that  
16 whatever options the Panel is considering, it should  
17 consider the aspect of long-term security, whatever the  
18 options.

19 MS. ROY: Okay. Thank you.

20 THE CHAIRMAN: If there are no -- Dr. Wilson.

21 DR. WILSON: So I'm assuming that also would  
22 affect the cost as it's estimated then?

23 MR. STANIK: Of course. Yes.

24 DR. WILSON: Yes.

25 THE CHAIRMAN: Thank you very much indeed,





1 Mr. Stanik.

2 ---Mr. Stanik withdraws

3 THE CHAIRMAN: Our next speaker this evening  
4 is Ms. Anne Lindsey, speaking on behalf of the National  
5 Action Committee on the Status of Women.

6 PRESENTATION BY MS. LINDSEY:

7 Good evening. I'm pleased to speak to you  
8 today on behalf of the National Action Committee on the  
9 Status of Women known as NAC. NAC is Canada's largest  
10 women's organization representing more than 500 member  
11 groups, whose combined membership totals 3 to 4 million  
12 Canadian women.

13 NAC's goals traditionally have been to  
14 realize equality and social justice for women across  
15 Canada. NAC prioritizes such issues as income security,  
16 quality health care, affordable housing, social programs  
17 and laws to prevent violence against women.

18 Many people have asked me why NAC is involved  
19 in nuclear issues, and the answer is simple. Women  
20 across Canada know that our social goals will never be  
21 realized in a devastated world. More than anything we  
22 know that our health and well-being, and indeed that of  
23 all of citizens, depends on a safe and secure  
24 environment.

25 NAC has a standing committee on the







1 environment and another called The Survival of the  
2 Planet Committee, both of which examine environmental  
3 and security issues in this light. That is why NAC is a  
4 participant in these hearings.

5 It's NAC's belief that the continuation of  
6 the nuclear industry contradicts the need for a safe and  
7 secure environment, not only because it holds out the  
8 threat of environmental catastrophe, but because it  
9 soaks up huge sums of money that could be used and  
10 better spent on environmentally sound methods of energy  
11 production, and on improving Canada's social programs.

12 In NAC's view, the approval of this concept  
13 for burying nuclear waste, and I won't say disposal  
14 because it is not disposal when the matter being buried  
15 remains lethal for hundreds of thousands of years, it's  
16 NAC's view that if we approve this concept it could well  
17 lead to an increase in the nuclear industry, to more  
18 reactors here in Canada, more uranium mines and more  
19 nuclear exports. NAC's policies, as stated in their  
20 resolutions, oppose this scenario in no uncertain terms.

21 We've prepared a 40 page brief to the Panel,  
22 which the Panel has. It details our concerns about this  
23 review. I'd like to outline what's in the brief and  
24 then discuss some of the areas in a little more depth,  
25 but I thought first of all I would quote to you some of





1 the comments that I received when I did a national, not  
2 a comprehensive, unfortunately, but fairly wide survey  
3 of women across the country, in my research for the  
4 brief.

5 The first one was a women in Toronto. She  
6 said, "AECL has been deceitful in its planning process."  
7 The second one was also in Toronto. "It's disgusting  
8 that they use public relations people to explain things  
9 to the public."

10 A woman in northern Manitoba told me,  
11 "Nuclear waste disposal is just like pulp mills or hydro  
12 developments. People's views are not heeded, even  
13 though these environmental reviews take place."

14 A woman in Winnipeg said, "People are never  
15 given a choice on what we feel is safe and good for us."

16 A woman in Nova Scotia said, "The idea of  
17 nuclear waste burial is appalling. Nuclear power means  
18 the end of the planet if we don't stop it."

19 Another comment from Toronto, "What right do  
20 they have to create this havoc? They are determined to  
21 destroy the planet."

22 And from New Brunswick, "Someone, somewhere  
23 will be poisoned, even if it's a hundred years from  
24 now."

25 In Edmonton, "Will we import waste from other





1 countries?"

2 In Ottawa, "If an industry is so unsafe for  
3 pregnant women or people in their reproductive years  
4 then it's not good for the community and no one should  
5 have to work in it."

6 And finally one from Toronto, "As long as the  
7 proponent is AECL there is a conflict of interest."

8 That's just a small sample of some of the  
9 comments I got from women across Canada.

10 Okay, to just summarize the brief very  
11 quickly. The brief is critical both of the terms of  
12 reference for the review and of the review process  
13 itself. It indicates our dissatisfaction with the  
14 general lack of time and money which characterizes this  
15 phase of the review. The brief calls for better access  
16 to information for the Canadian public, and actually one  
17 page in my brief is now changed. I understand that  
18 FEARO's data base is actually being published, finally,  
19 and you'll note that when you go through it.

20 We call for the Review Panel to actively seek  
21 out the input of people on all sides of the nuclear  
22 issue, both here and overseas.

23 The brief is critical of the narrow terms of  
24 reference for the review, especially its exceptions to  
25 questions of energy policy, reprocessing, the nuclear







1 fuel chain and links to nuclear weapons.

2 NAC is demanding that the terms be broadened  
3 drastically, and that the public have input to drafting  
4 new terms of reference.

5 We discuss the issue of historic versus  
6 future waste, pointing out it is one thing for us to  
7 take responsibility for wastes that have already been  
8 produced, but quite another to take responsibility for  
9 the God knows how much waste is yet to be produced.

10 We discuss our concerns about the nuclear  
11 fuel chain, especially uranium mining and nuclear  
12 reactors, and spent fuel reprocessing. We discuss the  
13 issue of location of a nuclear waste facility asking why  
14 Manitoba has never been excluded from the siting  
15 process.

16 We go into some depth on the question of  
17 social impacts, arguing that such a narrow review will  
18 never adequately address important social considerations  
19 such as the dread that people experience in connection  
20 with nuclear issues, and the draconian kinds of public  
21 policy which have evolved around nuclear decision  
22 making.

23 We discuss Canada's role in the proliferation  
24 of nuclear weapons, past and present. We discuss some  
25 of the more specific social and environmental impacts





1 which may arise in considering locations for nuclear  
2 waste burial, and the impacts of transportation of spent  
3 nuclear fuel around the country.

4 We encourage the Panel to read the brief  
5 carefully because we feel it contains material which you  
6 may not yet have encountered, in addition to the  
7 reiteration of many positions which you have doubtlessly  
8 heard over and over again since the beginning of the  
9 scoping hearings. Indeed, we've heard them many times  
10 before today. You have heard those positions over and  
11 over again because they are extremely important to the  
12 Canadian public.

13 Multitudes of calls to broaden the terms of  
14 reference reflect the utter frustration which citizens  
15 have experienced in dealing with the nuclear industry in  
16 this country, indeed all over the world.

17 The ethicist, Arthur Schafer, has pointed out  
18 that, and I quote, "The most profound political power is  
19 the power of non decision-making, of deciding what never  
20 becomes a matter for decision." In other words the  
21 power to set the agenda. And what has happened in this  
22 review is that one man, the Environment Minister, sets  
23 the terms of reference, and thereby excludes discussion  
24 of energy policy, the effects of the nuclear fuel chain,  
25 et cetera. The very issue about which the Canadian







1 public is truly concerned, and about which we have never  
2 been given the benefit of a full public hearing. Well,  
3 I understand we were once promised one by Brian Mulroney  
4 in an election campaign.

5           The Canadian government has always set the  
6 agenda on nuclear issues with very little input from the  
7 people of this country and the people are fed up with  
8 it.

9           On the question of nuclear weapons  
10 proliferation, Canada is inextricably involved in this  
11 deadly business. From day one, the Canadian nuclear  
12 program was working on production of plutonium for the  
13 Manhattan Project. Consequently the Candu reactor is  
14 the world's best plutonium factory. We have exported  
15 reactors to countries like Pakistan, South Korea and  
16 Argentina, all of whom have expressed an interest in  
17 gaining nuclear weapons.

18           It is unnerving, indeed it is sickening, to  
19 think that a regional conflict somewhere in the world  
20 could end up with millions of people killed and injured  
21 by plutonium from Canadian reactors. This idiocy must  
22 stop. Canada could easily be exporting environmentally  
23 sound terms of energy production around the world.

24           But not only that, we must recognize that  
25 since the first nuclear weapons explosion, humanity has





1 lived with the knowledge that we have the potential to  
2 destroy life. It's a realization that we now have from  
3 childhood, and it's one that we fight like mad to deny,  
4 and I'm sure that nuclear industry personnel must deny  
5 it more than any of us. But that denial won't just go  
6 away. It won't -- sorry it won't make our fears go  
7 away. Those fears resurface in the population every  
8 time nuclear developments are contemplated. It's one of  
9 the things that makes people fight against nuclear  
10 reactors and against nuclear waste dumps. It prevents  
11 community consensus on nuclear issues.

12 The dread and fear that we humans experience  
13 about nuclear power is a key social impact at any point  
14 in the nuclear chain, including waste management. It is  
15 not possible to nervously shrug it off and call it the  
16 NIMBY syndrome. It is manifest in the devastating  
17 aftermath of the Chernobyl nuclear accident. Millions  
18 of people, especially children, are suffering severe  
19 health impacts.

20 It is manifest in the growing body of  
21 research that demonstrates that even very low levels of  
22 radiation can cause severe health damage, not only to  
23 our generation, but to future generations through our  
24 genes.

25 Its manifest in the communities around the







1 Sellafield reprocessing plant in Great Britain, and when  
2 we talk about reprocessing we have to talk about that  
3 plant and about the impact that it has had on that  
4 community.

5 Robert Jay Lifton, who is a psychiatrist,  
6 calls it a primal fear about the integrity of the human  
7 body as threatened by the invisible poison of radiation.  
8 It is an expression of what somebody else has called the  
9 wisdom of the body, and it is every bit as valid as the  
10 technical considerations of the nuclear industry.

11 We must not be fooled into thinking that  
12 socio-economic impacts relate only to how many people  
13 will need to sell their land, or how much money AECL  
14 will use to entice a community to build a facility or  
15 how many hazardous jobs will be created.

16 Who's going to study the deeper issues? AECL  
17 is not equipped to do this work. Their idea of social  
18 impact studies is public opinion polling and  
19 manipulation of public opinion by soft sell ads on  
20 television and in magazines. Ads, I might point out,  
21 which the Canadian Nuclear Association was advised to  
22 aim at women with lower incomes and less education. Do  
23 they really think we are so stupid?

24 Charles Fox's presentation earlier today  
25 brought home very much to me the question of how







1 technology moves too fast for adequate social  
2 assessment. He said they can't even get the information  
3 to the people in their community because they have to  
4 translate it into so many dialects, and because people  
5 still don't understand some of the aspects of this  
6 technology. It moves too fast for us.

7           Some thoughts on environment assessments.  
8 How does AECL propose to analyse the environmental  
9 impacts of a concept? All locations in the Canadian  
10 Shield are unique, as are all communities. One thing  
11 seems to be common, however, and that is an abundant  
12 flow of ground water through the rock. Ground water  
13 which even AECL acknowledges will eventually become  
14 contaminated with radioactivity.

15           The big question is, how long will it take  
16 that poisoned ground water to reach the rivers, streams,  
17 lakes and wetlands of the Canadian Shield? AECL says it  
18 will take so long that the radioactivity will have  
19 decayed to a point where it is no longer harmful. They  
20 have elaborate computer programs to prove their  
21 assumptions, but according to some analysts their  
22 studies will not be complete until the late 1990's,  
23 certainly not by the time they must file their eastern  
24 environmental impact statement, and even if the research  
25 were complete by then, how much do we trust their





1 computer programs?

2 And to relate a familiar story, people now  
3 know that NASA's computer programs neglected a hole in  
4 the ozone layer for many, many years, and the reason  
5 that was finally given for that was that their programs,  
6 the computer programs, were set to assume that a hole  
7 that large could never have occurred. How do we know  
8 that AECL has all the right assumptions in their  
9 computer programs?

10 Surely this question is one of our -- pardon  
11 me, the question at issue here is one of our faith in  
12 technology, and surely faith issues are best hammered  
13 out by society at large, not by an esoteric group of  
14 nuclear experts.

15 Besides, the truth is that AECL and the  
16 Government of Canada have been professing faith in their  
17 hypotheses ever since the research began. Hardly a  
18 scientific approach, and it leads one to wonder what  
19 kinds of assumptions have been built into the research.

20 Unfortunately, even if we did feel confident  
21 about the concept of computer models, we citizens will  
22 not have the resources available to hire our own  
23 technical experts to examine the evidence. This is not  
24 to impugn the integrity of the Scientific Review Group.  
25 In fact, I was quite impressed with their report that







1 they gave this morning. It does not even necessarily  
2 question the quality of AECL's work. However, it's only  
3 right that the public carry out its own oversight of  
4 work of such an important issue in the public's  
5 interest, and with experts whom we choose ourselves and  
6 whom we trust. This has been possible, by the way, in  
7 the United States. It hasn't been possible so far here.

8 In a very thought provoking submission to  
9 another FEARO Panel, and this was the one that examined  
10 the fixed link between Prince Edward Island and the  
11 Mainland, Daniel Schulman of the Environmental Coalition  
12 of Prince Edward Island raises his concerns about the  
13 effects of cumulative uncertainties, and I'd like to  
14 read you some of his comments.

15 Okay. He says, "if predictive modelling of  
16 each of the impacts listed above...", and he had listed  
17 a whole series of them, "...leads to projections in each  
18 case with uncertainties of say, plus or minus 20 per  
19 cent, what happens to the cumulative result? Is the  
20 uncertainty of our overall assessment an additive  
21 combination of the individual uncertainties? Is it  
22 multiplicative? And even if we could mathematically  
23 combine all of the uncertainties, that result would only  
24 be for knowable uncertainties."

25 And further down he says this, "It is very





1 difficult for us to realistically grasp the true impact  
2 of this combined uncertainty. It really is mind  
3 boggling. We can hide behind all of the technical  
4 documents in the world and feel very impressed with  
5 ourselves. We can produce graphs, tables, computer  
6 models. We can employ many teams of consultants, each  
7 highly qualified in their own field, but in the end who  
8 are we fooling?"

9 I'm going to append this article because the  
10 rest of it is very wise also.

11 I believe it's these concerns which this  
12 Panel must consider as part of the environmental review  
13 for nuclear waste.

14 We have raised some specific questions which  
15 we feel would need to be addressed in our brief and I  
16 won't go through them here. I'll simply conclude with  
17 this comment.

18 NAC wants to see a substantial revision of  
19 the terms of reference to include the issues which we  
20 know are important to Canadians. We make that demand as  
21 part of our contribution to the scoping of this review.  
22 We make it on behalf of today's generation, and for our  
23 own children and grandchildren, and for their  
24 descendants, and we make it on behalf of the earth,  
25 which nurtures and sustains all life.





1                   THE CHAIRMAN: Thank you very much, Ms.  
2 Lindsey. We have listened carefully to your oral  
3 presentation and I realize you are just able to draw  
4 attention to a few of the highlights in your more  
5 detailed brief which is part of our record as of now,  
6 and I can assure you that we and the staff, and I know  
7 the SRG, will be having a very careful look at that as  
8 well. So that will be part of our ongoing task.

9                   Are there questions which people wish to put  
10 to Ms. Lindsey on basis of the oral presentation? We  
11 haven't had the chance to do more than skim the paper of  
12 course as you have spoken.

13                  Mr. Van Vliet.

14                  MR. VAN VLIET: Ms. Lindsey, is you spoke  
15 of -- that technology moves too fast and it's very  
16 difficult to get the information out, especially to some  
17 of the remote locations in the communities of the north.  
18 Do you have any suggestions as to how that process might  
19 be accommodated in a way that could be seen as  
20 acceptable by them?

21                  MS. LINDSEY: It's something I just thought  
22 about this afternoon, to tell you the truth, after Mr.  
23 Fox's presentation.

24                  I don't think it would be valid to speed it  
25 up because I think that people who are living in remote







1 communities, and aboriginal communities in the north,  
2 don't want it speeded up. They would like to probably  
3 get that information at their own pace.

4 Clearly I support their call for funding to  
5 be able to adequately prepare materials for presentation  
6 within their communities.

7 When I said it moves too fast, I think what I  
8 meant was it seems to me that we have to do very in  
9 depth social impact assessments on these kinds of things  
10 because it seems to me that the social issues are  
11 perhaps even more important than the technical ones. So  
12 I think eventually, perhaps people will understand it in  
13 their own way, but that we can't speed that process up.  
14 We are human beings after all.

15 MR. VAN VLIET: So you are really addressing  
16 the effectiveness, making it more effective, rather than  
17 faster or --

18 MS. LINDSEY: Oh, definitely. I think speed  
19 is not the issue here.

20 MR. VAN VLIET: Thank you.

21 THE CHAIRMAN: Dr. Wilson.

22 DR. WILSON: This morning we heard from the  
23 scientific review group that they felt there should be  
24 an integration of the scientific, environmental and  
25 social economic effects of this, and you have said in





1     rather forthright terms that you don't think AECL is  
2     equipped to do the socio-economic effects.

3                 Do you have suggestions in your brief or  
4     orally as to how the Panel might approach that?

5                 MS. LINDSEY: I guess I'll just elaborate a  
6     teeny bit on my point about AECL not being equipped. I  
7     mean I think they could hire people and so forth, but we  
8     have to remember that AECL's mandate, first and  
9     foremost, is research and development and also promotion  
10    of the nuclear industry. So I think that that very  
11    mandate would perhaps mitigate against their being able  
12    to do valid social research.

13                As for the rest of your question, there's a  
14    number of possibilities. I think one thing that  
15    happened in the United States some time ago now, and  
16    it's cited in my paper, was a panel that was convened to  
17    look at exactly that, the social assessment, and it was  
18    a panel of a very varied expertise from all around the  
19    country, and they did a very in depth look at some of  
20    the social issues that were raised in the U.S. program.  
21    I see that as being an improvement over anything that we  
22    have here yet. So that's one route, possibly.

23                DR. WILSON: You mention in your brief here,  
24    that the radiological nature of nuclear waste management  
25    will have important special impacts which go beyond







1 those of normal industries.

2 I'm not sure what you mean here. Could you  
3 elaborate a bit?

4 MS. LINDSEY: Some of the research that I  
5 have read shows that people -- in fact I spoke about the  
6 dread and the fear that people experience around nuclear  
7 issues, which is a very real thing. It's something that  
8 we all have within us.

9 It's exactly that dread which does have  
10 important impacts when people are considering the siting  
11 of a major nuclear facility, and there has been some  
12 research to that effect done in Texas and in Nevada,  
13 where socio-economic studies showed that people's  
14 perceptions of risk around nuclear power and so forth  
15 adversely affected some of their other opinions about  
16 the safety and so forth of the nuclear waste repository.  
17 At the same time, studies showed that those same people  
18 would not necessarily react adversely to other types of  
19 large scale development.

20 I think there is fair body of literature now  
21 that shows that there are special concerns relating to  
22 radiological concerns on nuclear facilities, which makes  
23 this study different in some ways then we would normally  
24 approach a mega project development.

25 In fact, even AECL's second interim concept





1 assessment touches very briefly on that issue. It makes  
2 that acknowledgment that the -- I believe it says the  
3 nuclear, or high tech nature of such a facility might  
4 cause adverse effects, but they don't go into any detail  
5 on that, and that does need to be examined.

6 DR. WILSON: A third thing, since you are  
7 from NAC, do you know of any studies that we should be  
8 looking at in terms of that kind of fear or dread that  
9 women, particularly, have in this area?

10 MS. LINDSEY: I'm sorry, I can't cite you any  
11 right off the top of my head, but there definitely are  
12 some and I could get you that information.

13 THE CHAIRMAN: Please do that, if you could  
14 follow-up, just to give us a reference afterwards. It's  
15 most helpful to make sure that we've captured everything  
16 that's been mentioned even though we don't have the  
17 specifics right now.

18 Dr. LaPierre.

19 DR. LAPIERRE: In your brief, on page 28, you  
20 indicate that there should be an independent body to  
21 look at social and economic impacts.

22 Now I don't know if you could expand on who  
23 you think this independent body should be. I thought it  
24 might be us.

25 The other question, I guess, is further on in





1 that page, in the second paragraph, you talk about --  
2 you mention methodology and assumptions be explicitly  
3 stated. I think that's extremely important. I guess my  
4 first question would be if you could expand on  
5 methodology and maybe you can, but maybe at least  
6 forward some references where we could study in more  
7 depth methodology and assumptions regarding social  
8 impact.

9 MS. LINDSEY: I can speak to that at the  
10 moment, actually.

11 One of the things I was thinking of as I did  
12 this research and wrote up this brief, was that it's not  
13 enough to rely on - how should I say it - I don't think  
14 it's enough to rely on the traditional rational methods  
15 of solving problems in this case. I think that there  
16 are probably other types of knowledge, other kinds of  
17 ways of looking at this question that must be included,  
18 and one of them that came to mind immediately was the  
19 work of that native woman at the University of Calgary,  
20 her name is Dr. Pamela Colorado, she's an  
21 anthropologist, and what she's doing is work on what she  
22 calls Indian science, and she's looking at the ways  
23 aboriginal people do their science, and she's looking at  
24 ways of integrating that together with the way that we  
25 western folks traditionally do science, to try to come







1 to some kind of understanding, not only of terminology,  
2 but of assumptions and basic understandings about what  
3 science is, and about how we see the world. And that's  
4 the kind of thing that I was thinking of when I wrote  
5 that section.

6 We need to say if we're going to do social  
7 research, based on very linear thinking, we need to say  
8 that's what we're doing, and if we are going to use  
9 maybe other models of examining things like our  
10 perceived risk and so forth, we need to say how we're  
11 doing it and where we're getting that information from.

12 My big concern with the way I have seen  
13 AECL's research develop so far, is that I think it's  
14 aimed more at propaganda and managing the public opinion  
15 rather than at truly integrating deep social  
16 considerations, and that is why I believe -- that's one  
17 of the reasons too that I believe AECL so far has not  
18 demonstrated an ability to do that kind of work in a way  
19 that I personally would find acceptable.

20 DR. LAPIERRE: Thank you very much. That  
21 answers my second part, but it doesn't answer my first  
22 part.

23 MS. LINDSEY: I forgot what the first part --

24 DR. LAPIERRE: Who is this independent body  
25 that you wish to do this?





1 MS. LINDSEY: Well, the thing that occurred  
2 to me is that we have a Scientific Review Group of very  
3 eminent scientists with expertise in a number of  
4 different fields, and I know that all on the Panel are  
5 very well respected in your own particular fields, and  
6 very many are indeed social in nature. I didn't see any  
7 social workers or psychologists or and anthropologists  
8 necessarily involved in this study and I think it is  
9 extremely important that we include all those kinds of  
10 disciplines in this work.

11 THE CHAIRMAN: If you have any names to  
12 suggest along those lines, because I mentioned in  
13 response to a comment of an earlier participant, we have  
14 it very much in mind that we will want to get additional  
15 help. We knew that we'd need the kind of help we'll get  
16 from the SRG, but we are now reaching the stage where  
17 we'll need some additional expertise in other areas  
18 which are certainly beyond their reasonable competence.

19 So, particularly on the social effects,  
20 social reactions and psychological side, if you have any  
21 names we are most appreciative if you could forward them  
22 to us.

23 MS. LINDSEY: Yes, I would.

24 THE CHAIRMAN: Madam Roy.

25 MS. ROY: Following what you just said,







1 would you elaborate on the difficulties to assess social  
2 effects or social impacts without any specific site to  
3 refer to?

4 MS. LINDSEY: I think it's extremely  
5 important to recognize that every community is  
6 different. That it's very easy for us -- say, for  
7 example, we're looking at northern communities. It's  
8 very easy for people who live inside the perimeter of a  
9 large city in the south of Canada to fool ourselves into  
10 believing that all the communities in the north are more  
11 or less the same as each other. I think that's very --  
12 that's probably a false assumption. They've all got  
13 individual histories, they've got their individual  
14 cultural mechanisms, they've got social networks within  
15 the communities which are unique to each community and  
16 that's why I'm saying that it's very difficult to do a  
17 blanket social assessment of impacts if we don't know  
18 where we're looking at.

19 And I also believe that it's clear that the  
20 geological characteristics of all the sites are  
21 different. I think it applies in both cases,  
22 geologically and socially, that people and communities  
23 are unique, and that we can't tar everybody with the  
24 same brush and that it's really hard for me, for  
-25 example, to know what's different about different





1 communities in the north until I go there, and same with  
2 anybody else.

3 MS. ROY: But do you think it is possible to  
4 make a first step evaluation at the concept level,  
5 conceptual level?

6 MS. LINDSEY: Yeah, I think it's possible,  
7 but I think you need to expand the terms of reference  
8 rather broadly before you can do that. The first time  
9 requires that we go back a little bit. That we say what  
10 are our assumptions are when we say that we can produce  
11 nuclear power for the benefit of cities in the south?  
12 What are our assumptions about northern communities when  
13 we do that?

14 And I think that we have not had adequate  
15 public input into the question of whether or not we want  
16 to even build nuclear power plants, let alone build more  
17 into the future, and then let alone with what we do with  
18 the waste.

19 I think preliminary assessments perhaps are  
20 possible, but they need to go -- we need to go back far  
21 beyond the original presumption of this review. They  
22 have to go back to the very area of whether or not we  
23 should continue to produce nuclear power.

24 MS. ROY: Thank you.

25 THE CHAIRMAN: Any further questions?





1           If not, thank you very much indeed for your  
2 presentation and also for the brief which you've  
3 submitted, and we're looking forward to a few more  
4 suggestions and references from you if you can find a  
5 moment to get that to us.

6           Thank you very much indeed.

7           MS. LINDSEY: Thank you.

8           ---Ms. Lindsey withdraws

9           THE CHAIRMAN: May I call next on Dr. Janet  
10 Silman of the Evangelism and Social Action Council of  
11 the United Church of Canada in Manitoba and Northwestern  
12 Ontario.

13           PRESENTATION BY DR. SILMAN:

14           Thank you. This is on?

15           Well, I've heard of God being thanked for  
16 winning football games but now I've heard of God being  
17 thanked for nuclear power, so that's interesting.

18           My name is Janet Silman and I staff the  
19 Evangelism and Social Action Council, the Conference of  
20 Manitoba and Northwestern Ontario of the United Church  
21 of Canada. We're the Council which has, among other  
22 things, responsibility for social justice issues within  
23 our region for the United Church, and environmental  
24 issues, and that's why I'm here.

25           My presentation this evening is divided into







1 six brief parts. So I will just run through them and  
2 summarize some and go into others at slightly more  
3 length.

4 The first part is just giving you a  
5 background of our Council's concern regarding nuclear  
6 waste disposal. Since 1986, the Council has given  
7 considerable attention to the problem of nuclear waste  
8 disposal. While we're concerned about the much broader  
9 range of issues raised by the use of nuclear energy, we  
10 have concentrated upon radioactive waste disposal  
11 because the underground research laboratory of Atomic  
12 Energy of Canada Ltd. is located in our region, as are  
13 many of the possible burial sites. Our conference  
14 extends east to Marathon, Ontario.

15 The context of our concern is theological as  
16 well as social and technological. In the prefaces of  
17 our presentation to the 1987 NDP hearing on nuclear  
18 power, and I've appended that document, I quote it a  
19 number of times, we stated, "For hundreds of years  
20 Christian theology has been misused to justify  
21 escalating exploitation and domination of the earth and  
22 its resources. This history of want and exploitation in  
23 pursuit of progress now is culminating in environmental  
24 crises of unimagined proportions, rivers poisoned, rain  
25 made toxic, forests, fauna, atmosphere and ultimately





1 people, destroyed. Slowly, out of necessity, this old  
2 theology is giving way to a renewed theology of  
3 stewardship. Careful analysis of biblical scripture is  
4 leading the United Church of Canada to a faith more  
5 firmly based on justice and on respect for the  
6 interdependence of humanity and the rest of creation, a  
7 theology of nurturing rather than subjugation."

8 We are concerned about the irretrievable  
9 burial of nuclear waste because it may well harm, and  
10 even eliminate future generations of human, animal and  
11 plant life.

12 The decisions we make today will have  
13 implications which push us dangerously close to playing  
14 God. Inasmuch as we, as a nuclear society, have  
15 produced radioactive garbage which is so lethal that it  
16 has the capacity literally to poison much of the earth.

17 We make this point at the outset because in  
18 the dispassionate discourse of science and technology  
19 where inordinate faith is placed in the inevitable  
20 management of any physical problem, the magnitude of  
21 danger and consequence of error easily can be lost.  
22 Nuclear waste management is not simply a technical  
23 issue, it is ethical, social and inherently theological.

24 Now, I won't say a lot about the narrow terms  
25 of reference. I mention it here as many people have.







1 We are also concerned about that, particularly because  
2 we don't think that disposal can be looked at separate  
3 from looking at the production, and it would be a  
4 tragedy, I think, if the result of these hearings, which  
5 are very important, I think, if the result is that the  
6 problem is apparently managed so that we can go and  
7 produce a whole lot more nuclear garbage. That would be  
8 terrible, and if that's the case then I would be  
9 saddened that we even participated.

10 Also we're concerned about the whole thing  
11 being a concept rather -- our dealing with a concept and  
12 not looking at actual sites, and other people have  
13 mentioned that. To rule out site consideration is to  
14 keep the discussion at an unnecessarily and abstract  
15 level. I think the fact is if a site were named people  
16 would be upset. That's why it's at a concept level, and  
17 let's be clear about that. When it could and should be  
18 grounded in the reality of the social and natural  
19 environments which may be chosen, and it is clear that  
20 that has to do with social environment as well as  
21 physical, as natural.

22 We've heard that the provincial government --  
23 well, the provincial government of Manitoba is not here  
24 and we're really saddened by that because we believe it  
25 should be here. It should be at the hearings and I





1 think other provinces should be here and should be at  
2 these hearings too, because people are -- their citizens  
3 are very concerned about this issue.

4 Therefore, we recommend that the Panel call  
5 upon the Federal Minister of the Environment to broaden  
6 its terms of reference in order to include the wider  
7 issues which impinge upon, and are raised upon the  
8 disposal of nuclear waste.

9 The Panel is given the mandate to, number  
10 one, review the safety of AECL's disposal concept and  
11 two, to review its acceptability. We'd like to see that  
12 term 'acceptability' defined more clearly because we  
13 think that's important, but what does it mean?  
14 Acceptability to the public? Acceptability to the  
15 people who are there? Acceptability to whom? So we  
16 make the recommendation that the Panel make public its  
17 understanding of and method for fulfilling its mandate  
18 to review the acceptability of AECL's proposal,  
19 particularly for the next round of hearings.

20 Number three, the role of AECL. In our 1987  
21 presentation to the NDP hearing on nuclear power, I  
22 quoted from it before, I quote again. "The objectivity  
23 of AECL's scientific research is open to question and  
24 especially in the area of radioactive waste disposal  
25 there is a definite air of prejudged success before







1 research even has been completed," and that's true right  
2 now. "The mandate given to Atomic Energy of Canada Ltd.  
3 through the Canadian Nuclear Fuel Waste Management  
4 program is to verify that the chosen option is both safe  
5 and secure, implying that the technology already is  
6 considered feasible and only need be demonstrated.  
7 Equally worrisome is the responsibility assigned to AECL  
8 to verify that deep geologic burial is also the  
9 'desirable' method of waste disposal. Implicit in the  
10 term 'desirable' is a significant value judgment on the  
11 virtues of the method. Hardly a decision which could be  
12 considered in the realm of objective science."

13 And nothing has changed with respect to AECL  
14 that would lessen our fears since 1987 over its  
15 prejudged, and, in our view, excessive faith in deep  
16 rock burial, and I underline the word faith.

17 We are concerned that the agency whose  
18 purpose is to promote and sell nuclear products play  
19 such a powerful role in determining its own waste  
20 management and so on, and that's been mentioned before  
21 and we also feel that there's an enormous conflict of  
22 interest in the fact of AECL doing this work even  
23 this -- you know, having to do -- having an enormous  
24 amount to do with determining the parameters, et cetera  
25 et cetera, of these hearings, when it's job is to







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1 promote and sell nuclear power, Candus, et cetera, et  
2 cetera.

3 So we recommend that the Panel question with  
4 appropriate bodies whether AECL is the appropriate  
5 agency to continue major research on radioactive waste  
6 management.

7 Number four, ethics of public participation.  
8 Since we first engaged this issues as a council, we have  
9 been alarmed at the secrecy which has shrouded the  
10 Canadian nuclear industry and repeatedly have called for  
11 both provincial and federal public inquiries as well as  
12 programs of authentic public education in the place of  
13 public relations campaigns, which is what we have been  
14 receiving. And we're insulted, as well as a lot of  
15 other people, with the kinds of stuff that's passed on  
16 as public education.

17 We're pleased that this hearing is taking  
18 place even though we're concerned about the narrow terms  
19 of reference.

20 We question the decision to exclude legal  
21 counsel from funding for these hearings since many  
22 germane legal and constitutional questions are raised in  
23 this environmental matter, and this disallowance of  
24 funding, legal advice -- funding for legal advice,  
25 functions to limit public access to information relevant





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1 to the review.

2 For example, with regard to pertinent  
3 legalities, we can envision the situation where the  
4 federal government endorses a site for deep rock  
5 disposal in a province such as ours which has  
6 legislation which prohibits such a facility. How strong  
7 that legislation is is a question, but that in itself is  
8 a constitutional and a legal question.

9 Even if the site is on federal land within  
10 the province, the surrounding area which could be  
11 contaminated may be in a position constitutionally to  
12 challenge the legality of the site. I mean this is all  
13 arguable, of course, but that is exactly the point of  
14 the need for legal counsel.

15 A further question of legality is with the  
16 notion of assessing a concept. This is similar to  
17 assessing the environmental and social economic impact  
18 of a garbage dump without knowing where the dump might  
19 be, or a hydro electric dam when we don't know where the  
20 river is. What does it mean in legal or constitutional  
21 terms, to assess a concept.

22 Because of this we recommend that public  
23 participation in the assessment process be ensured by  
24 increased publicity, sufficient time lines for each  
25 stage of hearings and monies being made available for







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1 legal inquiry. Additional if that's possible. It may  
2 not. I don't know.

3 So we feel that public participation -- well,  
4 we know -- I mean public participation is an ethical  
5 issue.

6 Nuclear waste management is an issue which  
7 extends across the lines of science, public  
8 decision-making, cultural values and the socio-economics  
9 of communities and of nation. Not only does it impact  
10 all our lives as citizens, and those of future  
11 generations, it requires decisions based on value  
12 judgments about the kind of society we sustain and about  
13 our stewardship of the earth.

14 Therefore, we recommend that the  
15 Environmental Impact Statement describe in detail the  
16 public consultation and decision-making procedures which  
17 will be used to determine the option chosen for waste  
18 management.

19 Number five, dangers of deep rock disposal.  
20 Now we don't pretend to be scientific experts on  
21 permanent bedrock disposal, but we've consulted and read  
22 sufficiently to know that there are grave risks in  
23 adopting this method of waste management.

24 To trust a method, based upon computer models  
25 and mathematical probabilities, a method which will have





1 to be secure for tens of thousands of years, we're  
2 talking about 500 and even 500 is almost  
3 incomprehensible, is an enormously risky business.

4 The fact that the power of atom was unleashed  
5 in the 1950's and we still don't know how to deal with  
6 it says something in itself, about the magnitude of the  
7 problem at hand.

8 Now to bury nuclear waste deep into granite  
9 with the most impregnable casing we thus far have  
10 derived, may seem the best solution. However, the  
11 question is whether the human made and natural barriers  
12 actually can contain that radioactive material for the  
13 thousands of years necessary in order for that toxic  
14 material not to leach into surrounding ground water.  
15 People have been talking about that of course.

16 What happens if the heat released by the  
17 method of disposal cracks the canisters and rocks  
18 surrounding them, is there a metal developed which does  
19 not corrode eventually? And here we are considering not  
20 hundreds, but thousands of years. What happens when the  
21 repository is sealed off and the waste becomes  
22 irretrievable? What happens if today's mathematical and  
23 scientific speculations prove to be wrong and  
24 contaminated water does seep into surface environments.

25 Given the dangers of deep rock disposal, we







1 recommended four things in this little section. That  
2 other options for disposal of spent nuclear fuel waste  
3 be researched exhaustively in order to develop a viable  
4 alternative to irretrievable rock disposal, if there is  
5 a viable alternative, if there is a viable solution, but  
6 to certainly look for the alternatives.

7 Should deep rock disposal be chosen, and  
8 here -- I mean we certainly aren't convinced, and a lot  
9 of the people here aren't, and so I hesitate to even say  
10 that, but it's in our report, it's superiority to other  
11 methods should be thoroughly delineated.

12 Every plan, decision and step in the process  
13 of waste disposal, and I would say management too,  
14 because disposal means burying it irretrievably, like  
15 that's -- when we meant disposal -- when we said  
16 disposal here, it didn't mean just that irretrievable  
17 deep rock disposal, be monitored by independent  
18 observers mandated to intervene should they detect  
19 breaches of predetermined, delineated I should say,  
20 safety codes and procedural guidelines.

21 The measures of containment, that's above  
22 ground also, be delineated should radioactive leakage  
23 occur at any step along the way from transport, to  
24 temporary storage, to, if there should be then final  
25 repository sites.







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1                   And finally, the ethical and social  
2 dimension. Until I deal with social ethics, I believe  
3 that all ethics are social, that's why its dimension. I  
4 thought afterwards I should have said dimensions. But  
5 this is certainly an ethic -- this is an ethical issue  
6 that is social.

7                   Anyway, is radioactive waste to be our most  
8 lasting legacy to future generations? What if that's  
9 the most lasting legacy we have. That's kind of a scary  
10 question in itself.

11                  Perhaps burying our lethal nuclear garbage  
12 will, in the final analysis, be the chosen way to  
13 proceed. I mean chosen not in the best, but that will  
14 be the one that is ultimately is chosen I should say  
15 there. Let the error be on the side of caution rather  
16 than on the side of calculated risks, especially when  
17 those risks are to be borne by future generations.

18                  Whether in science or religion, misplaced  
19 faith may be the most dangerous force in our world.  
20 Atomic Energy of Canada Ltd. has been briefing the  
21 gospel trust us, trust our scientific expertise. But  
22 the Council, along with many Canadians, is not among the  
23 converted. We would be dishonest to maintain that all  
24 United Church people agree with our lack of trust,  
25 particularly in places where the nuclear industry is the





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1 major source of employment. However, Selkirk  
2 Presbytery, which includes nuclear facilities within its  
3 boundaries, has debated the issue of underground nuclear  
4 waste and passed a resolution against its disposal in  
5 Manitoba and Ontario - and I've attached that  
6 resolution - and later in 1987, it was passed in '87,  
7 later in '87, the Annual Meeting of the Conference of  
8 Manitoba and Northwestern Ontario, United Church of  
9 Canada, also passed the resolution.

10 This motion, along with other actions by  
11 individuals and bodies within the conference,  
12 underscores the widespread concern people share  
13 regarding nuclear power. It also illustrates the fact  
14 that we, from the perspective of our Christian faith,  
15 view the issue of radioactive waste disposal to be  
16 ethical, spiritual and social, as well as economic,  
17 scientific and technological.

18 And so finally we recommend that the Panel  
19 consult with individuals and groups who can offer  
20 ethical, social and spiritual perspectives which raise  
21 questions germane to the use and disposal of nuclear  
22 material.

23 Thank you.

24 THE CHAIRMAN: Thank you very much, Dr.  
25 Silman.







1 I wonder if out of regard to our court  
2 reporter if we could just pause for a moment now so that  
3 she can change a tape. I think it's a brief operation  
4 on her part, but we are most anxious that she have a  
5 full record of that. So if we can just hold the  
6 questions for a moment until I get the "high sign" from  
7 that part of the technical operation.

8 THE CHAIRMAN: Questions for Dr. Silman  
9 flowing out of that presentation. Dr. Reese.

10 DR. REESE: Just a question for my own  
11 clarification. On page 1 you mention specifically  
12 irretrievable burial. In your oral presentation you  
13 sort of went back and forth, so I'd just like to be  
14 absolutely sure whether what you're really totally  
15 opposed to is irretrievable burial.

16 DR. SILMAN: Particularly irretrievable. My  
17 understanding is that most concepts are that it would be  
18 put down there for 50 years or so and then sealed off so  
19 there would be period of time. We would be opposed, as  
20 a council, to burial understanding that -- I mean the  
21 only kind of burial I've heard of it is that it goes  
22 down there for a while and then it's irretrievable. See  
23 what I'm saying?

24 So I mean to be fair to the Council, I think  
25 basically our view, and mine is, that from everything





1 that we've studied it seems best to keep the stuff above  
2 ground.

3 DR. REESE: But if it were underground,  
4 monitored and retrievable, is that still an objection?

5 DR. SILMAN: I think it's a -- because I  
6 can't speak for the Council for that, but I can speak  
7 for myself and I would say I think it's best above  
8 ground actually, but I mean that's something that I  
9 think has to be dealt with by the questions that you  
10 pose to AECL, and that has to do with the alternatives  
11 that are looked at, you know, that issue. Because my  
12 understanding is that its always been taught that what  
13 we have looked at it's always been spoken of as it's  
14 going to be buried for a while and then sealed off after  
15 say 50 years. So I haven't heard of anything else where  
16 its just been put down there and just sits down there  
17 for -- so I think that would be an option. That would  
18 have to do with the later hearings and so on and options  
19 looked at, et cetera, et cetera. It would be one of  
20 those other options.

21 THE CHAIRMAN: Dr. LaPierre?

22 DR. LAPIERRE: Dr. Silman, in your  
23 presentation on page 3, on ethics and public  
24 participation, you indicate that there should be an  
25 authentic education program rather than a public







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1 relations campaign.

2 May I ask you if you could elaborate on what  
3 is for you a proper authentic public education program  
4 and who should conduct it?

5 DR. SILMAN: Well, I don't think AECL should  
6 conduct it. I think that something total -- another --  
7 I think it would be better conducted by another -- if in  
8 the department, a totally independent body of people,  
9 totally independent from AECL. Because I think -- I  
10 don't think that a proponent of Atomic Energy is the  
11 appropriate body, you know, that its mandate is to sell  
12 the stuff. I mean it's really been -- we studied, we  
13 study the material that is produced and so I think that  
14 if it's -- for example, a department related to the  
15 environment and with people who are concerned about  
16 protecting the environment. A citizens group, whatever.  
17 It may be not the government, it may be a non  
18 governmental agency. There are people who can do that.  
19 But I don't -- especially it not be AECL. It may have  
20 to do with universities and so on, but I don't know, but  
21 that's my main concern. That it wouldn't be AECL. You  
22 see because I think it's not just the technical. I  
23 think it's important to understand, and many people do  
24 study the technical and scientific, but it has to do  
25 with social and ethical issues as well.







1 DR. LAPIERRE: That was my second part

2 DR. SILMAN: Much broader.

3 DR. LAPIERRE: Thank you.

4 THE CHAIRMAN: Dr. Wilson.

5 DR. WILSON: On page -5, under your third  
6 recommendation there, you're suggesting that every plan,  
7 decision and step in the process of waste be monitored  
8 by independent observers and so on. I don't know how  
9 far you've gone in your thinking there. What does that  
10 mean? Independent from whom? Who would appoint them?  
11 To whom would they be accountable? Do you have any  
12 thoughts on that?

13 DR. SILMAN: My understanding is in the  
14 United States this is done in some facilities and I  
15 don't know a lot about it, but I've heard of it being  
16 done. Like, this is assuming -- this would have had to  
17 do with waste management, if it's above ground or  
18 whatever. Like, there will be steps taken and basically  
19 that beforehand there are people -- you know, there are  
20 people there as a matter of course. Whether it has to  
21 do with another department of the government, maybe not  
22 another department, but that they -- say if it's AECL  
23 that's dealing with it, which is probably who is doing  
24 it, that it not be employees of AECL. That they be  
25 employees of some other agency. It may be a government





1 agency, may well be, but then of another department  
2 preferably, but that it be done as a matter of course.

3 THE CHAIRMAN: Mr. Van Vliet.

4 MR. VAN VLIET: Dr. Silman you made reference  
5 to legal counsel. Was that in reference to an advisory  
6 role to yourself or in a representative role?

7 DR. SILMAN: No, I haven't even thought of it  
8 in terms of ourselves. That would be fascinating. But  
9 I just think that there are legal issues related and I  
10 could envision - I'm not a lawyer. That's why I think  
11 it's important - but in many matters, especially where  
12 we're dealing - well not just especially - say where  
13 we're dealing with governments, where we're dealing with  
14 federal and provincial jurisdictions, where we're  
15 dealing with native land claims, for example. I mean  
16 with something like this, where we have legislation  
17 by -- including even by municipalities, and where we  
18 have one level of government, you know, fighting with  
19 another, that would be would be area.

20 It just seems to me -- and when we're looking  
21 at environmental areas we look at Alameda-Rafferty or  
22 the James Bay project, it seems like with any major  
23 environmental project that sooner or later our courts  
24 are involved and I think with our constitution that  
25 that's even more often the case, and it seems because of







1 that it would be valuable to have some legal minds  
2 thinking about that now. I think that that -- I could  
3 foresee our being in legal battles down the road and it  
4 would be valuable, it seems now, to have some idea about  
5 how that might play itself out.

6 MR. VAN VLIET: Would that not have --

7 DR. SILMAN; I think for groups, for example,  
8 NAC or whatever, I mean we don't have -- I mean, yes, I  
9 mean, if we have -- you should see the budget that we  
10 operate under as a council. The council I staff has a  
11 small budget. But whether it's our group or other  
12 groups. But I mean for groups -- citizen's groups who  
13 are coming to you, I think that when I heard that legal  
14 counsel was ruled out - and I know it's expensive, but  
15 also there are lawyers who are very committed to various  
16 issues and causes but who need some money, you know, to  
17 work on something of this magnitude.

18 MR. VAN VLIET: Why can't they volunteer the  
19 time like all of you do?

20 DR. SILMAN: Yeah, I'd like to volunteer my  
21 time too, but I have to pay my rent and so on, you know.

22 MR. VAN VLIET: Would the process of  
23 involving lawyers not have an intimidating effect,  
24 because obviously you would have lawyers then on both  
25 sides. Would it not intimidate --





1 DR. SILMAN: Well, I mean it's no more  
2 intimidating than scientists or ethicists, I guess. I  
3 don't know. It depends on how you look at it. But I do  
4 believe, I think that -- I think that I could very much  
5 foresee the courts being involved at some point so it  
6 would be valuable, I think, to have some legal minds  
7 thinking about it now.

8 MR. VAN VLIET: At a future stage?

9 DR. SILMAN: But let's have some ideas about  
10 it now to play out some of -- to see what might happen  
11 later or whatever because I think that likely will  
12 happen, especially when people don't want the sites and  
13 so on.

14 MR. VAN VLIET: Okay. Thank you.

15 THE CHAIRMAN: Any further questions?

16 If not, thank you very much indeed, Dr.  
17 Silman, for coming --

18 DR. SILMAN: Thank you very much.

19 THE CHAIRMAN: -- to join us this evening to  
20 speak to us.

21 ---Dr. Silman withdraws

22 THE CHAIRMAN: Can I call next on Ms. Cydney  
23 Trott, who has asked to speak to us this evening.

24 MS. TROTT: My name is Cydney Trott. I  
25 represent nobody





1 but myself, a private citizen.

2 Mr. Chairman, is Manitoba being considered as  
3 a possible nuclear waste dump site?

4 THE CHAIRMAN: We have made -- the  
5 government, I am told, has made no discussions  
6 whatsoever about eventual sites and certainly so far as  
7 this Panel is concerned we are not doing anything more  
8 in the course of our activities than looking into  
9 certain methodologies and criteria which might be  
10 applied to the selection process. I can't tell you more  
11 than that.

12 MS. TROTT: Has Manitoba been specifically  
13 excluded as a nuclear waste dump site?

14 THE CHAIRMAN: You will have to address those  
15 questions elsewhere than to the Panel. I'm afraid we do  
16 not have the knowledge nor the competence to respond to  
17 that.

18 We are attempting at this stage to gather the  
19 best information we can with respect to the questions  
20 which AECL must answer in its Environmental Impact  
21 Statement and that is the purpose of these gatherings.

22 MS. TROTT: Why is this hearing being held  
23 here in Manitoba? Are you soliciting the opinions of  
24 -Manitobans or are you sort of breaking ground for --  
25 yeah, why are you here? If Bill 28 prohibits the







1 disposal of nuclear waste in Manitoba, why are you here?

2 THE CHAIRMAN: We are here because a great  
3 deal of interest had been expressed at an earlier stage  
4 in the concept of nuclear waste disposal, including in  
5 Manitoba, and we felt that we should go to places where  
6 that interest has been expressed.

7 MS. TROTT: The interest hasn't been  
8 expressed by Atomic Energy, AECL?

9 THE CHAIRMAN: I don't think I can entertain  
10 any more questions of the kind which I'm not able to  
11 answer.

12 MS. TROTT: All right, let's go on to another  
13 question.

14 This is a nuclear waste hearing.  
15 Specifically which nuclear wastes are we discussing  
16 here, disposing of? Manitoba doesn't produce nuclear  
17 waste. Are we discussing nuclear waste from Ontario?  
18 From the United States? From other countries? Which  
19 nuclear wastes are we talking about?

20 THE CHAIRMAN: I've heard them all spoken of  
21 in the course of five weeks of hearing.

22 MS. TROTT: It is rumoured that much of the  
23 funding for this type of hearing and for nuclear waste  
24 disposal research in Canada comes from the United  
25 States. Is that so? Do you know.





1 THE CHAIRMAN: I think you'd have to address  
2 that to the Department of Energy, Mines and Resources,  
3 or possibly to Atomic Energy of Canada Ltd. to know what  
4 money comes. There's certainly a great deal of public  
5 money put into AECL, but for the rest you'd have to put  
6 your inquiries elsewhere. I'm not able to answer the  
7 question, nor I think are any other members of the  
8 Panel.

9 MS. TROTT: You don't know?

10 THE CHAIRMAN: I don't know.

11 MS. TROTT: Is Nuclear Energy, AECL and  
12 Canada, bound to listen to your recommendations when you  
13 finish these hearings?

14 THE CHAIRMAN: At the conclusion of our  
15 process, as I mentioned in my opening remarks, we will  
16 be preparing, and that will be two or three years from  
17 now in total, we shall be preparing a report which will  
18 be addressed to the Minister of the Environment and to  
19 the Minister of Energy, Mines and Resources. The  
20 decision thereafter will be in the hands of those  
21 ministers, which in effect means the hands of the  
22 federal government. I have no way of saying how our  
23 report will be received. I can only hope that we will  
24 do our work well enough that very serious attention will  
25 be paid to our recommendations.







1 MS. TROTT: Really, to tell you the truth, it  
2 doesn't sound like you know very much and you can't  
3 answer any of these questions. You've held these  
4 hearings all across Canada. It sounds to me like this  
5 is a toothless, impotent Panel. I don't understand why  
6 people of your stature allow yourselves to be used in  
7 this way, to tell you the truth.

8 THE CHAIRMAN: Well, I'll have to allow you  
9 to have your opinion, Ms. Trott, and we will have ours.

10 MS. TROTT: All right.

11 I'm confused about a word that I've heard  
12 over and over again at these hearings and that word is  
13 "disposal." I simply don't understand how this word can  
14 be used. There's no such thing as disposing of nuclear  
15 wastes. Even in millions of years from now they will be  
16 half as toxic as they are now and that's still far too  
17 toxic for any human contact. I don't understand why the  
18 word "disposal" is being used. It's not possible.  
19 That's a comment.

20 Now, a shaft has been built at Lac du Bonnet,  
21 at the cost of hundreds of millions of dollars. It has  
22 been called an experimental shaft for the purpose of  
23 researching the viability of the storage of nuclear  
24 wastes. Where else in Canada have such expensive  
25 experimental shafts been built? That's a question.





1 THE CHAIRMAN: Again, I would say that you  
2 must address your question to the Government of Canada  
3 or to AECL to know where monies are being expended.

4 MS. TROTT: I can't believe you honestly  
5 don't know the answer. Do you not know the answer to  
6 that?

7 THE CHAIRMAN: Well, I know that there is one  
8 experimental station which is at -- near Pinawa.

9 MS. TROTT: At Lac du Bonnet.

10 Where else in Canada? Are there any other  
11 experimental shafts that have been built in Canada?

12 THE CHAIRMAN: I do not believe there are  
13 other experimental shafts in Canada, no.

14 MS. TROTT: Well, it was built at the cost,  
15 presumably, of hundreds of millions of dollars.

16 THE CHAIRMAN: I'm sorry, I don't know  
17 what -- I can't either confirm or deny that your figures  
18 are correct. I could ascertain them but I don't know  
19 off the top of my head.

20 MS. TROTT: Okay.

21 When and if a nuclear site is approved for  
22 the disposal all of nuclear wastes, how would the  
23 nuclear wastes get to that site? Do you know that?

24 THE CHAIRMAN: That is one of the questions  
25 which we are already addressing. It's very clearly in





1 our terms of reference that we must look at  
2 transportation and the environmental impact and we  
3 shall, therefore, be looking at a variety of means of  
4 transportation and looking to all the questions which  
5 relate to the safety of transport by those various  
6 means.

7 MS. TROTT: I'm not a scientist, maybe new  
8 methods can be figured out. I can only assume they  
9 would be transported there by truck or by train. If so,  
10 the potential for a nuclear accident is enormous and  
11 where on the planet are the experts that could deal with  
12 such an accident? Certainly not in Manitoba.

13 THE CHAIRMAN: You have missed out one  
14 possibility, and that is at least a partial transport by  
15 boat, and that is a conceivable means of transporting to  
16 someplace.

17 As for the expertise, we have access to some  
18 and we shall be seeking access to other expertise,  
19 people knowledgeable on transportation and hazardous  
20 transportation questions.

21 MS. TROTT: Well, I submit that there is no  
22 known way of dealing with such a nuclear accident.

23 My concerns are provincial and local.  
24 Manitoba is rich in hydro electric power, and let's  
25 ignore for the moment of dangerous effects of all power







1 generation, and let's just confine ourselves to  
2 Manitoba. In this province at least, we don't need to  
3 concern ourselves with the operation of nuclear power  
4 plants or the disposal of nuclear wastes, and Manitoba  
5 should not be considered now, or at any time, as a  
6 nuclear dump site. That's all I have to say.

7 THE CHAIRMAN: Could I ask whether members of  
8 the Panel have any questions to put to Mrs. Trott?

9 DR. WILSON: I have.

10 I'm wondering why you took the time to  
11 address this toothless Panel?

12 MS. TROTT: Because I'm terribly concerned as  
13 a mother. I heard about -- is this a federal hearing?  
14 A federal Panel?

15 THE CHAIRMAN: It is indeed a federally  
16 created Panel.

17 MS. TROTT: I heard about it absolutely by  
18 accident. I don't think it was advertised. It hasn't  
19 been on news particularly. I heard about it in the very  
20 back pages of the newspaper about three weeks ago. If  
21 there is a public hearing, I think it's the  
22 responsibility of the federal government to make it  
23 widely -- to advertise it widely so that private  
24 citizens can come down and hear about it.

25 THE CHAIRMAN: We have indeed put paid





1 advertisements in newspapers for the earlier -- the  
2 first stage, which was at the open houses which were  
3 held in May and June of this year, and again for these  
4 public hearings, excuse me, these scoping meetings which  
5 we're are now engaged in.

6 I think we all recognize that there are  
7 limitations on how much people read of public notices  
8 and we're giving serious thought now to how we can get a  
9 better assurance that there will be fuller knowledge  
10 when we come to our next and final round of public  
11 hearings on the substance of the problem. But I can  
12 assure you that advertisements had been placed.

13 MS. TROTT: Well, I think the local press and  
14 television stations have been remiss in not informing  
15 the people sooner, too.

16 I'd like to say something. Eisenhower, who  
17 should have known, said, 'beware of the military  
18 industrial complex,' and you could use now -- you could  
19 say, beware of the corporate complex to dupe -- the  
20 corporal government, collusion, I think, to dupe people.  
21 This federal government is so irresponsible to citizen's  
22 concerns, and I think this is just another example. I  
23 think there's no question that the people of Manitoba do  
24 not want a nuclear dump site in Manitoba. I don't think  
25 the people of Canada want a nuclear dump site in any of







1 their communities, and I don't see why Canadians should  
2 even been considering for a minute disposing of American  
3 nuclear waste. Certainly no American state would  
4 consider -- take this proposal before their populace for  
5 a minute. Certainly not in Manitoba this shouldn't  
6 apply, and I don't even know why we're discussing this  
7 here.

8 DR. WILSON: That was my question to you,  
9 which you've answered.

10 MS. TROTT: Do you really think -- I know of  
11 your reputation, it's a very high one -- do you really  
12 think you're going to be listened to by the Atomic  
13 Energy Commission?

14 DR. WILSON: I asked you the question first.

15 MS. TROTT: I'm here because I'm very  
16 concerned, and there's no other place for me to go with  
17 my concerns. That's why.

18 THE CHAIRMAN: Other questions?

19 If not, thank you very much indeed Mrs.  
20 Trott. We've heard from you.

21 ---Ms. Trott withdraws

22 THE CHAIRMAN: Are there any other people who  
23 have not yet registered but who would like to address us  
24 this evening? If not, it remains for me to thank you  
25 very much for your presence here this evening, to thank





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1 particularly those who have participated.

2 This is but the opening step in what we all  
3 know to be a fairly lengthy process, but our  
4 determination is that we should go at it as  
5 systematically as we can and come up with, at this  
6 stage, the right questions to put to AECL and in a much  
7 later stage the best possible advice we can give, and to  
8 take the time necessary to do that.

9 Thank you all very much indeed.

10  
11 ---Whereupon the Scoping Meeting adjourned at 9:35 p.m.  
12  
13  
14  
15  
16  
17

18 I hereby certify the foregoing to  
19 be a true and accurate computerized  
20 transcription of the proceedings,  
21 to the best of my skill and ability.

22 for: C Helman  
23 Carla Helman, C.S.R.  
24  
25

















